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Gleanings in Bee Culture

VOL. XXXVII

OCTOBER 1, 1909

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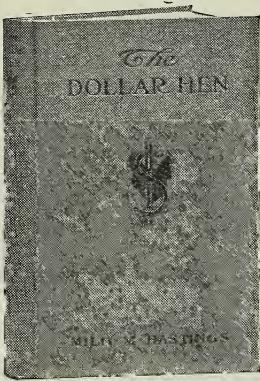
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Milo M. Hastings, until recently the COMMERCIAL POULTRY EXPERT FOR THE UNITED STATES GOVERNMENT, has written a poultry Book: "The Dollar Hen." This book is a complete, thorough, and concise work of 222 pages, containing 106,000 words, also several charts, maps, etc. The purpose of this book is to tell the reader—

How to MAKE Money Raising Poultry and NOT HOW TO LOSE IT

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As a Government Expert

As a Government Expert Mr. Hastings investigated all the various private systems, patent feeds, and so-called poultry secrets. He visited the great successful poultry-farming districts of Petaluma, Little Compton, Watertown, the South Shore, and other regions—some wholly unknown to the poultry press—and gathered from all these sources the best ideas and most profitable practices. From his long practical experience on farm, poultry-plant, with State Experiment Station work, and Federal service, and with his unprecedented opportunity to get at the actual facts of the poultry industry, Mr. Hastings has laid out a typical money-making poultry-plant, called

Why pay high prices for theoretically "balanced rations" when a practical food-chemist who has personally investigated the work of a score of experiment stations has found the most profitable poultry rations to be as simple as the corn and alfalfa diet of a Kansas steer?

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on PRACTICAL BEE CULTURE

\$1.00 With GLEANINGS ONE YEAR \$1.00

The writings of the late E. W. Alexander, who needs no introduction to the readers of GLEANINGS, have recently been collected in book form. A glance at the table of contents will show the scope of the book.

Table of Contents of the Alexander Book

- Alexander Plan for Weak Colonies.
- Bee-keeping as a Business.
- Brood-rearing in Spring.
- Comb v. Extracted Honey.
- Diseases of Bees.
- Disposing of the Honey Crop.
- Extracting Uncapped Honey.
- Feeding Back Extracted Honey.
- Foul Brood, European and American.
- Hive-covers.
- Hives, etc., to Adopt if Starting Anew.
- Honey per Colony.
- Honey-production.
- Honey-tanks.
- Increase, Making v. Buying Colonies.
- Italians, Yellow v. Leather-colored.
- Locality, What Constitutes a Good One.
- Nuclei for Rearing Queens.
- Organizing for Better Prices.
- Profits in Bee-keeping.
- Queens and Queen-rearing.
- Queens for Early Increase.
- Queens, Several in One Hive.
- Queens to be Reared from Best Stock.
- Spring Dwindling.
- Spring Feeding.
- Spring Management.
- Sugar, Loaf, for Feeding.
- Superseding Old Queens.
- Swarms, New, to Dispose of.
- Things Not to Do.
- Transferring Bees.
- Ventilation of Bee-cellars.
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Honey Markets

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent), cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

BOSTON.—We quote fancy white comb honey, 16 to 17; No. 1 ditto, 15 to 16; fancy white extracted, 9 to 10; light amber, 7 to 8; amber, 6 to 7. Beeswax, 32.

Sept. 11. **BLAKE-LEE CO.**

KANSAS CITY.—The demand for comb honey is good; receipts not large; demand for extracted is light. We quote No. 1 white comb, 24-section cases, \$3.25; No. 2 white and amber ditto, \$3.00; white extracted, per lb., 7. Beeswax, 25 to 30.

Sept. 20. **C. C. CLEMONS PRODUCE CO.**

DENVER.—We quote our local market as follows: Strictly No. 1 white comb honey, per case of 24 sections, \$3.30; No. 1 light amber, \$3.15; No. 2, \$3.00; white extracted, 7 to 8½; light amber, 6½ to 7%. We pay 24 cts. per lb. for clean yellow beeswax delivered here.

COLORADO HONEY-PRODUCERS' ASSO'N.

Sept. 21. **F. Rauchfuss, Manager.**

CHICAGO.—The comb-honey market is quite active for the season of the year. No. 1 to fancy is bringing from 15 to 16 cts., with other grades from 1 to 3 cts. less. Extracted is moving fairly well, white ranging from 7 to 8; amber, 6½ to 7; dark ambers, about ½ ct. less. Beeswax is in excellent demand at 30 cts.

Sept. 20. **R. A. BURNETT & CO.**

BUFFALO.—The demand for honey is only fair. It is usually slow at this season of the year on account of large quantities of fruit on the market. I expect it to do better by Oct. 1. Buyers seem to think the price is about right. I quote No. 1 to fancy white comb, 14 to 15; No. 2 ditto, 11 to 12; No. 1 buckwheat, 11 to 12; No. 2 ditto, 9 to 10; No. 1 white extracted, 7½ to 8; dark extracted, 5½ to 7; tumblers, 85 to 90 cents per dozen. Beeswax, 27 to 30.

Sept. 23. **W. C. TOWNSEND.**

CINCINNATI.—With the advent of cool weather we can see a brightening-up in the demand for honey, both comb and extracted. We have so far received but one carload of Western Colorado comb honey, and it is moving off nicely, as well as white-clover comb honey from the North. Fancy and No. 1 grade, 14½ to 16 from our store here; extracted amber in barrels is selling at 6 to 7½ according to the quality and quantity bought; white clover in 60-lb. cans, 9 to 9½. The above are our selling prices, and not what we pay. Beeswax brings 29 cts. per lb. for choice bright yellow delivered here.

Sept. 18. **THE FRED W. MUTH CO.**

ALBANY.—The demand for honey is improving. The crop in this vicinity is short, but we do not advocate holding for too high prices. October is the best selling month, when weather moderates and honey is good. Later on the demand is not so good. We quote white No. 1 comb, 15 to 16; mixed, 14 to 15; dark, 13; buckwheat, 13; extracted white, 8 to 8½; dark, 7 to 7½. Beeswax, 32 to 34; commission, 5 per cent.

Sept. 23. **H. R. WRIGHT.**

INDIANAPOLIS.—There is a good demand for best grades of honey, with market fairly well supplied. For fancy white comb honey producers are being paid 16 cents; for No. 1 white, 14; finest extracted in 5-gallon cans, 8. No demand for amber or off grades. Producers of beeswax are receiving 28 to 30 cents.

Sept. 15. **WALTER S. POUDER.**

PHILADELPHIA.—Dealers are now laying in their stocks of honey. The amount of honey-dew scattered throughout the East has stiffened up the prices since our last quotation. We quote fancy comb honey at 16 to 18; light amber, 14 to 15; fancy water-white extracted, 8½ to 9%; amber in barrels, 6½. Beeswax is firm at 18.

Sept. 20. **WM. A. SELSER.**

CINCINNATI.—The market on comb honey is exceedingly brisk. We have received four carloads, and sold the same in quantities from 100 to 200 cases at 14½; retail, 16. Extracted table honey is brisk, sage selling at 8½ to 9; amber in barrels, fair demand at 6 to 6½. Beeswax is slow at \$33.00 per 100 lbs. The above are our selling prices, not what we are paying.

Sept. 18. **C. H. W. WEBER & CO.**

ZANESVILLE.—The present demand for honey is about normal with little change in prices. Thus far there has been an under supply of No. 1 to fancy white-clover comb, which is what this market demands. For honey of this grade producers would receive from the jobbing trade 14 to 16 cts., white-clover extracted bringing 8 to 8½. For good clean beeswax I offer 28 cts. cash, and 30 in exchange for bee-supplies.

Sept. 18. **EDMUND W. PEIRCE.**

NEW YORK.—The new crop is now coming in freely, and arrivals are quite large. The demand is not quite as heavy as in former years, but we expect it to increase within the next few weeks. We quote fancy white at 15; No. 1, 13 to 14; off grades, 11 to 12. No buckwheat honey is on the market as yet, and consequently no prices are established. Extracted honey is in good demand, particularly California, of which the receipts are very large. We quote water-white 8 to 8½; white sage, 8; light amber, 7 to 7½. In large lots these prices are being shaded. Clover and basswood bring 8 to 8½; light amber, York State, 6½ to 7; Southern, in barrels, 60 to 75 cts. per gallon, according to quality. Beeswax is dull and declining, quotable at 28 to 30.

Sept. 20. **HILDRETH & SEGELEN.**

Honey Markets continued on page 21.

DELICIOUS HONEY.

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Sample, 10c. Truly if you ever ate fine honey
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SEVENTY ARTICLES

I have taken the pains to count the contributions, editorials, and selected articles in the REVIEW for July, August, and September, and there are actually seventy in all! Of course, it would be somewhat tedious to read the titles of them all, but perhaps you will be so kind as to take the time to read the few that I have selected. They are as follows:

Some Tales about Extracting that are not "Twice Told," by Elmer Hutchinson.

A Novel Plan for Turning Bees into Honey, by E. B. Tyrrell.

The Psychology of Instinct and Acquired Knowledge, by George W. Williams.

Extracting Honey without Brushing or Shaking the Bees, by S. E. Miller.

Quick and Easy Methods of Clearing Supers of Bees, by F. B. Cavanagh.

An Uncapping-machine that is Simplicity Itself, by L. R. Ferguson.

Determination and Energy, versus Length of Tongue, by J. W. Southwood.

Raising Prices and Building up a Home Market on Honey, by Leon C. Wheeler.

Pertinent Points to be Considered in Selling Honey, by Wesley Foster.

The Development, Retention, and Dissemination of the best Bees, by M. V. Facey.

Cleaning Surplus Combs, Queening, and Scattering Outyards, by Elmer Hutchinson.

Does Frequent Extracting Stimulate Bees to Greater Energy? by Harry Lathrop.

Some Points in Developing a Mail-order Trade in Honey, by H. C. Ahlers.

Change of Conditions, Instead of Shaking, Produces Results, by Adrian Getaz.

Producing Comb Honey Successfully without Using Separators, by W. K. Morrison.

The Production of Comb, versus Extracted Honey, by E. A. Leffingwell.

Building a Wintering-cellars in a Sandy Hillside, by Morley Pettit.

Some of the Modern Energy-producing Mediums, by F. B. Cavanagh.

For ten cents I will send you these three copies of the REVIEW, and the ten cents may apply on any subscription sent within a year. I will also send you a circular making some specially low clubbing offers.

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Thanking all of our friends who helped to build us up by favoring us with their patronage, and wishing all of our brother and sister bee-keepers much success and happiness, we remain

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St. Joseph, Mich., Sept. 26, 1908. C. L. HALL.

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By the Bee Crank



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GLEANINGS IN BEE CULTURE

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EDITORIAL

BY E. R. ROOT.

A CORRECTION.

THE following letter from Toepperwein & Mayfield, San Antonio, Texas, will explain. We do not know how the error occurred, but it is worthy of correction.

We wish to call attention to a typographical error in our report of the honey crop in Texas—p. 512, Aug. 15. Instead of the price advanc'ng 4 cts. per lb. it should read $\frac{1}{4}$ of a cent. TOEPPERWEIN & MAYFIELD.
San Antonio, Texas, Aug. 24.

LENGTH OF BEE-FLIGHT.

REFERRING to the discussion in the *American Bee Journal* and GLEANINGS, on the question of how far bees can fly for nectar, Mr. C. P. Dadant, in the *American Bee Journal*, and Editor Hutchinson in the *Review*, seem to agree to the statement we made in these columns, to the effect that most of the honey that bees gather comes within the range of a mile or a mile and a half from the yard.

But referring to the question as to how far bees can see, Mr. Dadant rather doubts our statement to the effect that bees may have telescopic vision. He would be more inclined to think that when they go a great distance they are guided by the sense of smell rather than by sight.

CARBOLIC ACID TO KEEP BEES AWAY FROM SPRAYING-LIQUIDS.

In this issue a correspondent, on page 611, refers to the fact that when trees are sprayed while in blossom in Canada, the law requires that the mixture be flavored with crude carbolic acid. This is to keep bees away, for it is well known that the drug is very offensive to them.

If it is necessary to spray while trees are in blossom, which we doubt very much, it would seem that it might be a good idea to have a similar amendment incorporated in our anti-spraying laws.

We present the suggestion to our readers for what it is worth. In the meantime we should be glad to get reports from those who may be in position to know whether the carbolic-acid sprays, or, rather, spraying liquids

flavored with carbolic acid, will not be touched by bees.

WHEN IT IS "HONEY" AND WHEN "HONEY-DEW."

MR. FRIEDMAN GREINER, see page 594, and the bee-keepers of Pennsylvania, as indicated in their convention proceedings in this issue, apparently regret that the United States Department of Agriculture, in its pure-food regulations, has put a ban upon honey-dew by forbidding its sale under the name of honey, and requiring it to be branded and sold as honey-dew. As we understand it, when there is only a very small quantity of the dark stuff in the combs—not enough to darken the color or impair the flavor—it may be sold as *honey*; but when there is considerable of it, it must be put under the name *honey-dew*. The difficulty comes in here—where to draw the line. Thousands of bee-keepers in the country to-day are up against the proposition. To call it "honey-dew" will ruin its sale. To brand it as "honey" will render them liable to fine, imprisonment, or both.

It is proper to remark right here that the national law applies only on territorial and interstate business.

POOR FOUL-BROOD LAWS IN SOME STATES, AND WHY.

SOME of the bee-keepers of our various States are making a serious mistake in drawing up foul-brood bills and submitting the same to their State legislatures. It is unwise to copy from some other State, as it may have a very poor law. Those who are contemplating the drawing-up of bills for submission to their State legislatures would do well to correspond with Dr. E. F. Phillips, of the Bureau of Entomology, Department of Agriculture, Washington, D. C. Dr. Phillips has made this question of foul-brood legislation a special study, and he will be glad to send a draft of a bill that he would recommend for enactment.

It is difficult to get a foul-brood bill through both branches of the legislature; but it is no more difficult to get a good bill through a poor one. In one or two States bills have been enacted into laws that are practically a dead letter, and largely because the original promoters had not been properly informed as to the form of law they should have.

THE NEW A B C AND X Y Z OF BEE CULTURE IS
RECEIVING SOME QUITE EXTEN-
SIVE REVISIONS.

As we look over from one year's end to another we can see some most decided gains in our general knowledge of bees and the methods of handling them. In the multitude of counselors there is wisdom. In a journal like this, one will profit immensely if he will simply compare notes. Suppose the other fellow's plan does differ from yours. You will probably find that, on many points, you agree. It also transpires that occasionally your experiments point in a certain direction. You are not quite sure of your ground; but if half a dozen others trying out the same class of experiments arrive at about the same conclusions as yourself you have the definite assurance that you are on the right track. In deciding what shall and shall not find a place in the new edition of our work we try to use that which has the indorsement of a number of our best men.

The new work, we confidently believe, will be as nearly accurate as any volume on bees that has ever been put out. It will contain a large number of new illustrations made expressly for it, some of which will appear from time to time in these columns. It will place strong emphasis on methods of management, which will be illustrated by a series of what might be called moving pictures, or, more exactly, a series of snap-shots, showing each step in the operation. We are now nearly half way in the work of revision.

HONEY-CROP CONDITIONS; THE SCARCITY OF
EASTERN WHITE HONEY.

REPORTS continue to pour in to show that this is probably the greatest year for honey-dew ever known in this country; that the crop of clover and basswood is very light, owing to the drouth of last fall.

The number of bee-keepers in this country to-day who have clear white clover and basswood is very limited. We have had editorial charge of this journal for nearly 25 years now, and in all our experience we do not remember a year when the indications showed so light a crop of pure clover or pure clover and basswood mixed as this year. Had it not been for the honey-dew, the season would not have been as poor as some we have had in the past; but the very abundance of honey-dew will make the year 1909 the shortest on a strictly clear white honey east of the Mississippi and south of the great lakes that we have ever known.

There is further evidence that the crop of alfalfa and mountain sage in the Western States will not make up for the deficit of clear clover and basswood. It is our opinion that prices on the first quality of white honey, either comb or extracted, will be very firm. Whether they will advance over present quotations we can not say.

The few bee-keepers who have a clear white clover or basswood should make the fact known. There are buyers who are writing us now, inquiring where they can get it.

Reports also indicate that there is considerable honey-dew and clover mixed, of a very fine quality. This would probably bring pretty good prices were it not for the fact that the public in years gone by have been told about the so-called manufactured honey. As the flavor of honey-dew clover is different from any thing they have tasted before, consumers jump to the conclusion that the honey is manufactured. To sell this honey-dew honey of good flavor will mean a campaign of local advertising to educate neighbors and friends that this is the real product from the hive. No one can sell such honey to the consumer as well as the producer himself.

HONEY-DEW AS A WINTER FOOD; A WARNING.

It will, perhaps, be well to caution those of our readers who have considerable dark honey-dew in their combs to remove the same and substitute sugar syrup. A strictly all-honey-dew is usually a very poor winter food; and if the winter should be at all severe, thousands of colonies will die of dysentery. In most cases it is probably true that a large proportion of the honey-dew has been used up, or was used up, during August and September, and that honey from asters, goldenrod, or buckwheat has taken its place. Ordinarily we would risk any of these honeys, or a little honey-dew mixed with any one of them; but where the winter food is almost a pure honey-dew, we certainly would advise taking it out, holding it over until next spring, and giving it to the bees to stimulate brood-rearing. In fact, we know of no better use that can be made of this product. It is just as good for rearing brood as the best sugar syrup that was ever put into a hive. In late spring and early summer, combs containing honey-dew can be used very nicely. The best way in the world to feed in the spring is to give combs of sealed stores; and it does not matter whether these stores are sugar syrup or honey-dew in late spring or summer.

HOW LATE CAN ONE FEED SUGAR SYRUP? HOW
TO MAKE IT.

A GOOD many questions are being asked as to how late one can feed in the fall. Ordinarily we would say the sooner the syrup can be given the better. As to how late one can do so will depend upon conditions. We have sometimes fed, in our locality, clear up to the middle of November. However, at that time the bees have but very little opportunity to manipulate the syrup, much less cap it over. The purpose of early feeding is to give them a chance to "invert" it to some extent, and at the same time to make a winter nest. This they do by emptying the cells in the combs at the point where the cluster is, so that the bees on both sides can get the advantage of body heat. When the syrup is fed late they can not make this winter nest before cold weather comes on, and consequently there will be a space one inch thick, or as thick as the comb, containing cold syrup between several clusters of bees.

Such a condition is not according to nature; and one can readily see that a bunch of bees, no matter how large, that is separated by slabs of solid honey or syrup can not keep as warm as where the combs are empty and the bees can crawl into the cells, thus establishing bodily contact heat between several divisions of the bees separated only by the midribs in the combs.

With regard to making sugar syrup it is an advantage to use hot water, for the reason that the sugar will dissolve a little more readily. Cold water may be used, but it will require considerable stirring. As to proportion, we would advise a two-to-one rather than a two-and-a-half or three-to-one mixture. The first mentioned will make a syrup a little thinner than honey; and if it is fed early enough the bees will "invert" it slightly, so that it will not be so inclined to granulate in the combs. If the feeding must be deferred until the first of November in about this latitude, we would recommend making a syrup two-and-a-half to one or three to one. In that case it will be necessary to use a little honey, as recommended by Mr. Doolittle on page 561 of our last issue.

SHAKING TO MAKE UNITED BEES PEACEABLE.

ELSEWHERE in this issue, in his regular department, Mr. Doolittle has an article on uniting, to which we wish to call special attention. As usual, our correspondent does not recommend any plan of manipulation until he has tried it time and time again, and knows that it is reliable; and so in this case.

When we gave that plan of introducing by shaking the bees in front of the entrance, on page 556 of our last issue, and further suggested that the same general principle might work very satisfactorily in uniting, we had not seen what Mr. Doolittle had to say on this question. While we saw no reason why it should not be feasible, it is some satisfaction to know from such an authority that it actually does work.

The reader will notice that the plan we suggested on page 556 differs from the one described by Mr. Doolittle, in that he recommends bringing the two hives, the bees of which are to be united, gradually together two or three feet on different days until they are side by side. Whether this last is a necessary procedure, we do not know; but doubtless our correspondent has found that merely shaking them together would not be sufficient to make them abandon their old location in favor of a new one unless they are shaken into a box and confined for a few hours until they assume the condition of bees that have swarmed out and have re-clustered.

In relation to this plan we may say that we have tried it a good many times at our out-yards in making up baby nuclei, and found it to work admirably.

Simply uniting two lots of bees from two different locations in the yard without shaking or bringing together a few feet a day simply means that the old bees that have

been moved will go back to the old stand. They may be moved again and again until they all stay in their new location; but this involves a large amount of work.

The general scheme of shaking bees together in a box where there is no brood, honey, or combs, makes them feel a sense of loss. The one, two, or three lots that are put together, by reason of their bodily contact come to have the same general odor. When, therefore, they are dumped in front of a new location and given combs of honey and brood they behave, to all intents and purposes, like a swarm.

We shall have a series of snap shots shortly which will show just how this is done.

IS IT NECESSARY TO DISINFECT HIVES THAT HAVE CONTAINED FOUL BROOD?

On p. 452 of our issue for Aug. 1, while admitting that in most cases foul brood would not be carried through the hives, we stated that, inasmuch as disinfection by means of fire was so simple, we thought it very unwise not to take the precaution; that we had talked with Canadians who said that the McEvoy treatment, in some cases where hives had not been disinfected, had failed to effect a cure; that our own experience of many years ago in a few cases showed how the disease was transmitted through the hive.

The following letter furnishes pretty good proof that the disease can be transmitted in just that way:

On page 452, Aug. 1, the question is asked, "Is it necessary to disinfect hives when giving the McEvoy treatment for foul brood?" My experience indicates that it is. Last fall I wanted to transfer a colony on good combs in an old hive to a regular 8-frame hive; and not having a hive-body (the frames in my hive were Hoffman self-spacing), I borrowed one from a neighbor, getting the bottom-board and hive-body only. Later this colony died of foul brood.

A few days after borrowing this body and bottom-board I bought a hive from the same neighbor. This hive was complete with old combs, super, etc., but no bees. This was put in another yard, and the colony in it also developed foul brood. I used the super upon another hive this summer, and this colony has developed foul brood. This neighbor lost all his bees by foul brood, but did not know the reason for his loss until I discovered the foul brood in my apiary, and traced it to his yard. I also used one of the empty combs from the neighbor's hive to hive a swarm of bees for another neighbor, and that colony developed foul brood.

There were four distinct cases of foul brood—first, through the hive-body and bottom-board; second, through the old combs and hive; third, through the super and section-holders; fourth, through a single comb. I might add that, in my investigation, I found still another neighbor also got foul brood in his yard by buying an empty hive from the first-mentioned yard. Hereafter, Mr. Editor, I will use a gasoline blow-torch on any hive that has had foul brood, and burn up all frames. I find that it does not pay to take any chances. I want to be on the safe side, regardless of the opinions of others.

M. Y. CALCUTT.
Dunlap, Seattle, Wash., Aug. 9.

Foul brood is too terrible a disease to take any chance with; and it is and always has been our policy to advise taking the safe side on this question. A few reports showing that foul brood can be transmitted through the hive are worth a thousand negative testimonies where the disease has not been carried in that manner.

STRAY STRAWS

BY DR. C. C. MILLER

I'M IN LUCK. A car famine is on, and if I had honey to ship I might have trouble to get a car. Fortunately, I've none to ship. [Great luck, that! Dr. Miller has the happy faculty for seeing a silver lining to every dark cloud.—ED.]

YEARS AGO, at Jesse Oatman's, Dundee, Ill., I saw winter cases like Bartlett's, page 563, only Oatman's were two-story, for 8 hives, which made the expense less per colony. They worked well, but I think he gave them up for cellaring.

FIVE-INCH SPLINTS, I'm sorry to say, don't work here, at least not with light brood foundation; been trying it, and there's too much buckling. [We shall be glad to get reports from those who have tried five-inch splints or splints in general.—ED.]

I DON'T KNOW what Mr. Holtermann means, p. 457, by saying "they make the entrance to the hive $\frac{3}{8}$ in. deeper than the width of the hive," but I wish he would tell us how deep was the space where the bees built comb between bottom-bars and floor.

B. H. BARNES, honey vinegar is counted a very superior article if made from good honey. Dilute with water till an egg will just float in it, and after it stands long enough it will be vinegar. Very full details in A B C and X Y Z. Mead and metheglin are a little dangerous to meddle with—too near the alcoholic line.

B. WALKER'S plan of having field-bees take their loads directly into the supers, page 533, will require less handling of the honey than the ordinary way, in which the honey is dumped below and afterward toted above. Will not that interfere just a little with the ripening of the honey? [We don't know. Can any one answer?—ED.]

OTTO DENGG, *Leipz. Bztg.*, 65, speaks of the "American plan" of unqueening a colony a week before giving brood to start cells in, and of the Swiss unqueening a day beforehand. In this country I think it is pretty generally the case that the unqueening and the giving of brood occur at the same opening of the hive. Unqueening a day before might be better, but a week—I doubt.

FRITZ LEUENBERGER, Swiss foul-brood inspector-in-chief, has written a five-cent foul-brood pamphlet that German readers will find up-to-date. He doesn't agree with American inspectors that a non-disinfected hive may be used again. He goes even beyond Editor Root, instructing to scrub the hive thoroughly with a ten-per-cent solution of concentrated lye, and then with a painter's lamp scorch the hive-walls to a brownish color.

IF YOU HAD referred Mr. Ford's letter, p. 498, to A. I. Root, he would at once have said, "A frame of brood will hold a swarm from absconding." [Years ago we tried this

remedy time and time again; but it failed too often for us to recommend it. We advise taking these persistent swarmers down cellar and keeping them there until they cool off. While we believe that a frame of unsealed brood helps somewhat, it is not enough to restrain bees that seem bent on swarming. But, doctor, you did not tell what your experience was.—ED.]

A. W. SMYTH, M. D., *Irish Bee Journal*, 44, says that most old bees can eat foul-brood bacteria with impunity, but not young ones; and where foul brood prevails, numbers of young bees that have been fatally attacked by the bacteria will be seen crawling on the ground. That's new to me. [We doubt this very much. The dead bees that doctor found to be sick and dying were probably affected by something else. If his statement were correct, it would have been verified over and over again by bee-keepers for nearly a century back.—ED.]

WHEN I LEAVE an opening at the top for ventilation my bees, as a rule, do not use this opening as an entrance. Others report that their bees do. I wonder if the difference is not in this: Their bees have this opening early; mine, not till after having the regular entrance established. Bees are great for following precedent. No. 4 had a hole at the back of the bottom-board, which it used as an entrance when first taken from the cellar instead of the very small hole allowed in front. A large part of the bees continue to use this obscure entrance at the back, in spite of the fact that, during all the lifetime of the present generation of bees, the entrance in front has been many times larger than the hole at the back.

HAVE FED about 1000 pounds of sugar on the half-and-half plan. Beautiful in theory —gives bees chance to invert sugar; in practice I don't like it. Years ago I fed much thick syrup—a ton of sugar one year. It took only a tenth as long, bees wintered well on it, and what more do you want? I used an even teaspoonful of tartaric acid to 20 pounds of sugar. Ye editor says 2 sugar to 1 water, page 556. No use to have so much water. I had $2\frac{1}{2}$ to 1. F. P. Clace, p. 566, makes it 3 to 1. That's still better, if it works right. No use to make bees evaporate an extra 16 pounds of water for every 100 pounds of sugar. [At this time of year, or before cold weather sets in, a syrup of two parts of sugar to one of water would, in our opinion, be better than a syrup of three parts of sugar to one of water. A little evaporation and a little inversion on the part of the bees is doubtless a good thing. When we give a three-to-one sugar syrup it is practically as thick as honey, and therefore can not be manipulated by the bees. Such a syrup is quite sure to candy, and will do so unless a little tartaric acid is used. You will note that G. M. Doolittle recommends a two-to-one syrup, and then adds honey to prevent candying. We should be glad to get reports from our veterans, because we feel that we can not afford to make a mistake.—ED.]

BEE-KEEPING AMONG THE ROCKIES.

BY WESLEY FOSTER, BOULDER, COL.

SCALES FOR WEIGHING SECTIONS.

A scale registering from half an ounce to two pounds is necessary in grading honey properly. Every section need not be weighed; but all doubtful ones should be. One will soon get to be accurate in judging the weight of combs of honey with a little practice. An aid in quickly finding out the correct weight of the sections is to paint an arrow on the scale at the $13\frac{1}{2}$ -ounce mark; and, if there is room, one at 12 oz. Then any sections not coming up in weight to the highest arrow must go in the No. 2 grade; and any not weighing 12 oz., put in with culls.

A scale with a tin scoop can be had for \$1.35, and one of brass, nickel-plated, for \$1.50 to \$2.00. These scales are very handy about the house in weighing out recipes, spices, etc.

SELLING CULLS AS CHUNK HONEY.

Unfinished and light-weight combs are often hard to realize on to their full value. If melted down, no more can be had for culls than extracted, and hardly as much unless it is rendered very carefully.

One way to sell such combs easily is to provide the grocer with a glass pickle-jar, if he has none empty, and cut the combs out, fitting them in so the comb will show nicely through the glass. The grocer can sell by weight, and put the honey in oyster-pails for the customer. If the combs are not too much unfinished, three will weigh about two pounds. Honey in this shape is attractive; and, though not so desirable as honey in the sections, it is eagerly sought. It can be sold for somewhat less than the regular section-box goods.

HOW AN ISOLATED BEE-KEEPER MAY MARKET HIS HONEY.

The honey-producing sections of the West are so isolated from each other that any co-operative ventures in buying and selling are not successful unless there are bee-men in each locality to make carload shipments.

The only means available for the producer who is isolated from other bee-men is to sell his product at the home markets or ship it to some honey association. Where the fruit-growers have stores and warehouses they often sell honey for their members, shipping it with fruit to the large cities. If I did not have confidence in the honesty and experience of the fruit-association manager in handling honey I would market it myself. The most economical method is through a honey association honestly and efficiently managed.

FOLDING SECTIONS SQUARE.

One cause of sections not being square is that the grooves may not be cut exactly true. If cut too wide the section will wobble and

be weak. If cut too close the section will bow out when folded. If the sections have been wet too much the wood will swell enough to cause this bowing of the folded section.

With a Rauchfuss combined section-press and foundation-fastener a good operator can fold, starter, and place in the supers from 200 to 400 sections an hour. I do not want to sit down at a job of this kind all day, though, for it gets to be very tiresome.

My brother and I put up 2500 in about nine hours. I scrape the supers and separators, cut the foundation, dampen the sections, fill and wedge the supers, and carry them away to the pile, while he does the folding and starting. Others may be able to beat that for speed, but it does not take very long to fill all one's supers if you work half a day at it for several weeks. A better fastening of wax is secured if the machine is worked rapidly and the lamp turned up almost high enough to smoke. If it is not worked fast when the lamp is turned up, the plate gets too hot.

GETTING ON THE RIGHT SIDE OF A GROCER.

I see an advertisement in GLEANINGS for a honey salesman who is a bee-man. This is a hopeful sign. There ought to be several hundred such, traveling in the fall, winter, and spring, covering every city of any size in the country. Many small towns can be profitably cultivated too. The bee-keeper who sells his own honey, often does not get what he should for it. In large places the grocers expect to buy honey cheaper of the producer than of a wholesaler or commission man. The grocer feels that here is a chance to buy under the market; and, any way, if the honey is unsatisfactory he has no recourse, while the commission house can be made to right any mistakes made in sending out poorly graded or under-quality goods.

The first impression made on the buyer is vital to the effectiveness of the interview. If the grocer believes you are honest and reliable, putting up a good quality of goods, he will be quite willing to deal with you. I have had the experience of being turned down the first time, and at each subsequent visit felt the chances for making a sale become slimmer. In a case of this kind it is best to quit calling there or study the man; get on the side away from his business; he must forget that you are trying to sell anything. Visit with him; any man you are talking with should be your friend—that is, you should meet on a friendly basis.

I have been an interested listener to all kinds of talk. Some I did not agree with; but if the speaker was really animated over his subject, when through he was in condition to receive suggestions as to honey. Many say "no," emphatically; but they should be kept from saying this until they know the facts, and if you have their attention they won't say it "right off the handle" without explanation. It is best to wait about interviewing a man till you can have his undivided attention for a few minutes.

NOTES FROM CANADA

BY R. F. HOLTERMANN.

PLACE FOR EMPTY SECTION-SUPERS.

Wesley Foster and Dr. Miller have referred to the place for locating empty section supers. Dr. Miller says, page 490, Aug. 15, "When I've put an empty section-super under a partly filled one in a waning flow, the bees have kept on with the old super, and left the lower one untouched." My experience under such a condition has been that the bees tend to crowd the brood-chamber more with honey.

"SHAKING" BEES.

From the statements made by some bee-keepers one would think that certain portions of Italy, Mexico, etc., must have harvested a tremendous honey crop after the recent earthquakes. "Shaking" is largely a thing of the past with me. I never had much faith in it as a proper method of treating bees; and, after trying it, I liked it less than ever. When it comes merely to throwing bees about and leaving the hive just as it was before, I am quite satisfied there is nothing in it. To my mind, Adrian Getaz, in *Bee-keepers' Review*, well expresses the truth in the heading of an article "Change of Conditions, Instead of Shaking, Produces Results."

THE ENERGY OF SWARMS.

Dr. Miller, what a man of war you are! and perhaps I may add, what a man of courage that you dare attack the well-established fact (?) that a swarm works with greater energy than a colony which has not swarmed. But let me whisper to you that I am sure you are quite right. A swarm does not have to look after brood, the fruit of three weeks' laying in the hive, and almost all the bees in the swarm can go to the field; but in three weeks' time, and if a virgin queen has issued with the swarm in perhaps five weeks' time, there are far less bees in the colony; and if at that time a honey-flow is available the bee-keeper who has kept his bees content without swarming will gather with his one colony more than the one who allowed the colony to fall to pieces.

BASSWOOD POLLEN.

On page 267 of the *American Bee Journal*, right above an article written by G. M. Doolittle who says basswood has no pollen, is the following, contributed by J. L. Byer:

It is the generally accepted idea, I believe, that basswood yields little if any pollen. If any one were here now he could easily be convinced of the fallacy of this idea. For the past week the weather has been showery and very cool for the season of the year, and to-day, July 22, the basswoods are in full bloom. On trees near the house here, the bees are working on the bloom during the rain, which is falling lightly; and although they are getting but little nectar, nearly all the bees have minute light-yellow pollen-balls attached to them as they enter the hives.

Strange to say, the bumble-bees are in full force in the bloom, and nearly every one of them has quite large loads attached to it, as they can be seen flitting among the blossoms. Personally I have not the least doubt that the pollen is coming from the blossoms on

which they are working; and, indeed, what other reasonable solution of the problem could be offered?

It is the first time I have noticed the like; and when I first saw the bumble-bees with the pollen I could hardly believe my own eyes. I believe it is generally the case that, when pollen is being yielded by a plant in an abnormal proportion, the nectar is scarce—at least this is always the case with clover, and at present it is true with the basswood, as practically no honey is coming in. Of course, the weather is really too cool and showery to expect nectar to come in from any source.

I, too, found the bees bringing in this colored pollen in the basswood season. As to the quantity of pollen, it may be true as stated; but I doubt whether the amount of pollen produced by the blossom varies. Is it not rather that the bees visit more blossoms to get a load, and that their attention is directed to a greater extent to the pollen?

SELLING HONEY.

There is no doubt that over half of the honey at present produced in Canada could be sold by bee-keepers locally. This is especially true in the rural communities. I find that farmers are prepared to buy a large quantity of honey. In many cases they buy sixty-pound cans; but they want honey—not a cross between nectar and honey—and they want good quality all through. In very many instances this has not been the case. Now that we have a provincial apiarist we should get the most out of him possible. In my estimation he has too much to do when he devotes all his time and energies to his government work. Furthermore, if he devotes all his time and energies to government work he has too much to do without having certain counties to inspect for foul brood, as he has at present. For years I have felt that a government official who has no personal interest in the sale of honey, and whose motives could not be influenced by voice and pen, could draw attention to honey, and increase the consumption of it enormously. By all means let us get the most value out of our provincial apiarist; and when he produces the goods as to valuable work, let us insist that he be well paid. The provincial apiarist may and must see how much needs doing; but he will be powerless to do it unless the Department of Agriculture enables him to do it; and bee-keepers can strengthen his hands by educating the Department of Agriculture.

ARE QUEEN-EXCLUDERS HONEY-EXCLUDERS?

On page 491, August 15, Louis H. Scholl calls queen-excluders "honey-excluders." Now, if he is right we want to know it. You might tell us whether large honey-producers like Dr. C. C. Miller, G. M. Doolittle, and others use queen-excluders or not; and if not, how do they manage? Three years ago some queens got up into my sections and spoiled enough honey to pay for all the queen-excluders I would ever use. Since then I use them on every hive.

Cokeville, Pa., Aug. 27.

JOHN MAJOR.

[*Comb-honey* producers like Dr. C. C. Miller, G. M. Doolittle, and many others who run for comb honey, do not, as a rule, use queen-excluders. The queen apparently does not like to go into a lot of little compartments like section boxes containing foundation or comb drawn out from foundation. When she goes above it is generally to lay drone eggs in drone-cells. But the majority of extracted-honey producers find it necessary to use excluders, and not all of them find they are honey-excluders. We shall be glad to get additional testimony from other producers.—ED.]

CONVERSATIONS WITH DOOLITTLE

AT BORODINO, NEW YORK.

UNITING BEES IN THE FALL.

A correspondent writes: "I have quite a few weak colonies of bees that I wish to unite this fall. How should it be done?"

Select two weak colonies as close together as possible, and bring them, say, two or three feet toward each other every time the bees have days of flight until the hives stand side by side. Then leave them until the bees have had one good flight while the hives are close together, and after this the colonies may be united at any time when the temperature is 55° F., or above. Sort out from the two hives combs containing the most honey, or at least sufficient for winter stores—an amount that should not be less than 25 lbs. Set these combs in the hive the best way to occupy in the winter, alternating combs from each hive so that the bees will not quarrel. Having these combs of honey in the hive, put the cover on and shake all the bees from the remaining combs, shaking a comb first from one hive then from the other. The work is now done as soon as the bees have run into the hive and the empty hive with the remaining combs is stored away.

Where there are many weak colonies to unite, or if, as in the case of a queen-breeder, there are from 50 to 500 nuclei to unite, the above plan involves a large amount of work, especially if such weak colonies are scattered some distance apart. Years ago Elisha Gallup told how to make natural swarms artificially by first smoking the bees and then alarming them by rapping on the hive with a stick, thus causing them to fill themselves with honey. After they were filled with honey, the larger part of them were drummed into a box by the means usually pursued in drumming out bees. When a sufficient number were in the box it was carried to the new location and left leaning up against something for a couple of hours. After this the bees could be hived the same as though they were from a natural swarm.

I tried this same plan for uniting, except that I got all of the bees from two hives into the box, and it worked fairly well until I tried uniting queenless bees from nuclei from which I had previously sold the queens. I found that I could not make the queenless bees stay in the box, as the mother-queen is needed to keep them contented. To overcome this difficulty I made a cage from the upper story of a tiered-up hive, putting wire cloth on the top and bottom, the bottom piece being nailed to a frame that was fastened with hooks to the hive so that I could remove it when I wished. A hole was bored through one side of the hive, which side now became the top of the cage. The hole was just right to permit the small end of a funnel, such as was used for putting up bees by the pound for shipping over the country on the plan so much in vogue fifteen or twenty years ago. Over the hole was arranged a large flat

wooden button which could be turned so as to open or close the opening as desired.

With this cage I proceeded to a queenless nucleus and blew smoke in at the entrance, after which I gave the side of its hive several blows with my foot or fist. Then I went to another hive and did the same thing. After this I returned to the first hive and repeated the performance, and then again on the second hive. By this time the roaring of the bees inside indicated that they were filling with honey—just what I wished them to do. I therefore waited a minute or two for the bees to take all the honey they would, and as soon as they were filled I shook them into the funnel so that they rolled down through it into the cage below. I soon had in the cage all the bees of the nucleus except the few that were in the corners of the hive or those that took wing before they struck the funnel. Then closing the hole with the button I went to the next nucleus, removed the cover, etc., ready for shaking, and set the cage down quickly so as to jar all the bees in it to the bottom. I soon had the bees of that nucleus in the cage also.

If I wished to get the bees from more than two nuclei I prepared three or four in the manner described before I shook any, so that no time would be lost in waiting for the bees to fill with honey. If four nuclei were smoked and drummed, the first one would be filled with honey by the time I got around to it again to commence shaking. I often put as many as six or eight small nuclei together to make one good colony for winter; but four is about the maximum number that can be drummed and shaken at one time; for if more are attempted the bees of the last two or three commence to unload their honey before they are shaken.

When I had all that I wished in the cage, the funnel was taken out and the hole closed, and I proceeded to get the queen that I wished to introduce to them. By bumping the cage on the ground I again jarred the bees down to the bottom, and then I immediately opened the funnel-hole and allowed the queen to run in. Then I rolled and tumbled the bees about in the box until all were thoroughly mixed up and demoralized so that all thoughts of fighting or harming the queen had disappeared. After this I put the cage in some darkened room where the temperature was about 60 degrees and left it until near sunset, when I prepared a hive with combs of sealed honey sufficient for winter stores. By this time I brought the box of bees from the cellar, took off the movable wire-cloth side, dumped out the bees, and hived them as I would a natural swarm. If I did not have enough combs of sealed honey for all, I gave empty combs and fed sugar syrup, as I described lately in GLEANINGS.

A very essential part in the above method of uniting is to have the bees well filled with honey. If I am afraid that a certain lot of bees in a cage are not full of honey I jar them down and put a quarter of a pound of honey or syrup on them, and then by rolling them about each one gets its share until all are full.

GENERAL CORRESPONDENCE

COMB-BUILDING.

Full Sheets of Foundation are Absolutely Necessary from the Standpoint of Economy; Combs Built Better in Supers than in Brood-chamber.

BY E. M. GIBSON.

[Our readers will not forget that the writer of this article is one of our extensive producers. His business is on such a scale that he runs three eight-frame power extracting-outfits. The statements of one so extensively engaged in the business should have some weight.—ED.]

With due deference and kindly feeling toward those who differ with me, I would say that the inexperienced should by all means use full sheets of foundation. Enough more honey will be secured to pay for the foundation, the resulting combs will have few or no drone-cells, and if splints are used in the way that Dr. Miller recommends the combs will be almost perfect. I bless the doctor every day as I look at those combs built clear down to the bottom-bar with no buckling or elongated cells—a result that it is impossible for me to get by the use of wires. I would pay more than \$1.00 a pound for foundation, if I could not get it for less, and I would gladly pay 25 cts. apiece for drawn combs, and furnish the foundation from which they are built. No doubt those who believe that wax production is involuntary on the part of the bees may think that this is an exaggeration; but this is my experience, and I do not believe that locality has any bearing on the question either.

It is so simple to demonstrate this point that no one need to be in doubt more than one year. Take, for instance, 15 colonies. Give to five of them full sheets of foundation; to another five, drawn combs, and allow the remaining five to build their own combs. Now note the difference in the amount of honey produced, also in the number of drone-cells and in the quality of the combs. It goes without saying, that colonies in such a test ought to be nearly alike in strength, in the quality of the queens, etc.

I started an apiary this year in as good a location as can be found in this section. All the colonies had young queens, and they were in better condition in every way than the two other apiaries, except that they had full sheets of foundation in the supers, whereas the colonies in the two other yards had the drawn combs. This yard produced one-third less honey than the two others which had the drawn combs.

This has been a poor year in California, and the difference is more perceptible, although the results are the same, even in a good year. I have had similar experiences heretofore, but this year's record has demonstrated beyond a doubt that it pays me to use full sheets of foundation. I use all the

wax that I produce, and have bought hundreds of pounds besides. I like to have the combs built in the supers as far as possible, as the bees do better work than they do at comb-building in the brood-nest; and if any thing goes wrong with the comb it will be detected and remedied better in the super. I had foul brood five years ago, and nearly all my combs were built in the brood-nest, and they were a poor lot. I am getting rid of these as fast as possible.

WAX-SECRETION NOT INVOLUNTARY.

I am convinced beyond a doubt that the conditions for the production of wax by the bees are made in the same manner that the conditions are made for egg-laying by the queen; that is, by the quality and quantity of food consumed. It would be just as reasonable to consider the laying of the queen involuntary as to consider wax-production involuntary. I have seen a queen void eggs promiscuously for a short time after conditions were made so that she had no cells to deposit them in; but this was for only a short time; and, in the same way, it is probable that wax scales on the bees may be in evidence for a short time.

Jamul, Cal.

FOREIGN AND AMERICAN METHODS COMPARED.

BY F. GREINER.

The American bee-keeper is apt to take it for granted that we are leading the rest of the world in the apicultural profession. The idea has even been expressed in print, and the outside world has not well received it. Indeed, it would have been more becoming if the thought had never been uttered, even if true. Perhaps it can not be denied that a certain class of bee-keepers in different countries are looking toward America as setting the pace. We have brought out and adopted entirely different hives, developed unique methods, and implements of a new order; different practices have gained a foothold here not common in other countries, but it must not be forgotten that conditions here differ totally from those in other lands, and that other conditions beget and demand other practices. It would be hard, for instance, to induce the bee-keeper of Northern Germany, where the heath furnishes honey abundantly, to adopt expensive sectional hives, costly sections and shipping-cases, as long as he has a much more simple and inexpensive arrangement from hive to shipping-case than we ever thought of having, even when we were using the soap-box on top of the box hive for a super.

The professional heath bee-keeper has his hundreds of straw hives, keeps hundreds of colonies, and lets them swarm to the heath bees' sweet content. He usually accepts every swarm, and hives each into the cone-shaped straw hive. The heath furnishes an abundance of dark gummy honey, and enables even late swarms to lay in quite a sup-

ply. The larger portion of all the colonies is taken up every year. They are not necessarily brimstoned, for generally the bees are driven or drummed out and sold to less fortunate bee-keepers without a late flow, who not unfrequently need bees to strengthen their depopulated colonies. Lehzen, the president of the Deutsche Imkerbund, says, in Hannover alone as many as 40,000 naked swarms are for sale every year.

When the hives are freed from bees they are shipped to some great city. The owner, of course, takes them himself. In the city he hires a small room on some back street where he establishes himself and his workshop. Every day some combs are cut from the hives which have answered him as shipping-cases. The honey is sorted, and deftly placed in wooden nickel-trimmed trays. With one of these on his shoulder or head he starts out in white and spotless attire, going on the streets crying, "Honey! honey! honey!" The people seem anxious to buy this honey, and as soon as a tray is empty another one is brought out or the empty one filled up again. In this way the honey is disposed of; and when the contents of the last hive have been cut out, all are then shipped back, and are ready for the next campaign.

When compared with our often complicated methods we shall not be surprised if we can not persuade these bee-keepers of Hannover, Holstein, etc., to invest in sectional or Aspinwall hives, hive-lifters, section-cases, extractors, etc.; and yet if he had to face American competition with American conditions he would have to change his sails or go under.

EUROPEAN FRAMES.

In other parts of Germany and Austria the conditions are different from the above, and frame hives and refined management have become necessary. A very narrow frame has been and is yet very popular. It was claimed by Dzierzon and other advocates that such a frame would act as a brood-restrictor. Only few gave a frame approaching the Langstroth a trial. Gerstung is among the latter. The following gives his idea and his conception of the working of the different frames: "The honey-bee inclines to form a cluster globular in shape. The honey appears in the upper part of the comb and around the brood. In a very narrow hive the honey is found above the brood only, and is thus forced into the so-called honey-chamber. A very shallow hive has the effect that the first honey goes into the super; and if perfect comb honey is desired it is a good plan to use half-story frames above, holding about three pounds. Two little uprights may be used to divide the shallow 3-lb. frame into three parts; and when these are filled the combs may be cut out and left to drain, then wrapped up in waxed paper, and thus brought into the market. It is imperative that but very small pieces of comb foundation be used for starters, in order not to make the resulting honey unpalatable."

It will be seen that Gerstung and we here in America are not so far apart. If his hon-

ey-flow and the conditions surrounding him were like ours, his hive and his methods of handling bees might have developed on exactly parallel lines.

Kuchenfueller, another German authority, has constructed a sectional hive with not quite so shallow a frame as is used by Heddon, Aikin, and Hand; however, his management does not tally with ours, owing to the different conditions and demands of the producing and consuming public. He has this to say about the management of bees in his hive: "Every colony should occupy the central portion of the hive at the beginning of the season. When the colony begins to expand, the tendency is more downward than upward; and two stories with foundation-filled frames are placed under the brood-nest, and this is the whole, and all that needs doing that season, except taking away the honey in the upper portion of the hive. The queen, following her inclination, soon fills the new combs below with brood, the upper set or sets of combs answering for what they are best fitted—the storing of the incoming honey."

CROSSING DIFFERENT STRAINS OF BEES.

To have young queens in as many hives as possible is not so generally indorsed by European bee-keepers as by our Americans. In Switzerland they lay great stress on *colonies superseding timely*, without any attention from the bee-keeper. They think they have developed or are developing a strain of black bees that may be relied upon to do so. I know of some bee-keepers here who have procured bees of this strain, and it would be interesting to know how the bees have behaved.

The heath-bee, which has been mentioned above, is a strain of the black bee, which, in the course of years, has developed the swarming tendency in a high degree, somewhat like the Carniolan. Herr Lehzen, whom I quoted before, says that the heath bee is excellent for crossing with the common blacks, the resulting cross being exceedingly vigorous. He claims that the swarming habit soon disappears when conditions change. With the Carniolan stock when used for crossing this is not so here with us. Wherever there was a trace of this blood our bees would swarm excessively. I doubt whether we in America have had any experience with the heath bee to warrant our passing an opinion.

SHAKING ENERGY INTO BEES.

Lehzen says, by moving apiaries into the heath (a very common practice in Northern Germany), the occurring crossing with the drones from the heath bee is very beneficial, as it dispels laziness. At the same time he says that the moving itself has a beneficial influence, shaking energy into the bees, as we have termed it—an idea advanced by different bee-keepers here—Scholl and others. I found, many years ago, when we transferred bees from box hives by the old method, that the operation had an invigorating effect upon a colony so treated for that season. I had marvelous yields from them at that time.



I also find that driven swarms work with increased zeal. I shall do more of this work in the future with such colonies as contain cross-built comb structures as often found among farmers.

THE DISEASE SITUATION IN EUROPE.

Few of us here will indorse the following: "The combs of hives to be taken into winter should not be over one year old." This is what the bee-keepers of Holstein and Hannover practice. We can see no good reason for discarding older combs as long as they are good, except perhaps as a precautionary measure against foul brood.

As to foul brood, the German authorities have held for many years that the only sure way to wipe it out was by the cremating process. Over 30 years ago the bee-keepers in Germany and Austria were almost carried away with the salicylic treatment. Herr Emil Hilbert discovered that the foul-brood bacillus would quickly die in a weak solution of this chemical, and by spraying the diseased combs it was said that the disease could be cured. Hilbert was greatly honored, and even decorated by several crowned heads; but after all, the salicylic acid and other drugs like thymol, lysol, etc., did not prove as effective as was hoped, and so it is still advised to burn everything affected with the disease. Herr Lichtenthaler has had 16 years of experience with foul brood, and has concluded that all combs containing 25 per cent of the diseased brood should be burned up. On the other hand, he says that the pollen contains the spores and disease germs; and if the bees are put on healthy combs late in the fall the colony will be cured.

Only recently the American treatment of shaking and treating like a young swarm has come to the front, particularly in Switzerland. A little book on foul brood has very recently been sent me for inspection and criticism. It is written by Fritz Leuenberger, Berne, Switzerland. All the statements made therein, the methods of treatment given, the precautionary measures, etc., so nearly reflect what we have learned within the last few years in every particular that one would be excusable for assuming the writer had been well posted on what was going on here in America. About the only thing he omits is that, above all races of bees, the Italian is most nearly immune to the disease, and will resist infection, even clean up, where the black bee would succumb. We can excuse the writer for this omission, because, particularly in Switzerland, the black bee is boomed more than any other—in fact, exclusively, of late. The Swiss bee-keepers have all the confidence in the world that they will succeed in stamping out the disease, and have organized an insurance agency. The yearly insurance premium is about 1 cent per hive; and if any colony is lost, $\frac{3}{4}$ of its value is refunded. Even bee-keepers who have not insured but submit to inspectors' treatment, receive often half of the value if funds are available. The writer of the above work gives the data of this insurance business in his little book, with many other interesting

facts as to the work and mission of different bacilli, having a bearing in every-day life. Our German readers might find this little book beneficial reading. The price is only 5 cts., which is nominal. I think the bee-keepers of Germany and Austria will soon quite generally adopt our American foul-brood cure, and that with benefit to themselves.

LAWS IN REGARD TO HONEY.

The great bulk of honey produced in Germany, Austria, and Switzerland is in the liquid form. While with us in America the price of comb honey is twice that of the extracted honey, in these countries little difference is made in price between the two. A bee-keeper would, therefore, be very short-sighted to produce comb honey for the market. When honey is spoken of, extracted honey is always meant, and the people more readily buy it than they do here, although a lot of adulterating is being done there. More adulterated mixtures are on the market there by a long way than the genuine article. Bee-keepers, however, are not hampered by such a law as we have on our own statute-books—the honey-dew-honey law. The American bee-keepers ought to see to it that this unjust and unwise law is repealed as speedily as possible. What bee-keeper of our land could, with any degree of safety, guarantee his honey as being gathered from blossoms only? He has no way of knowing it, unless he has an analysis made. All he can say is that his honey is the product of the hive.

A BRAZILIAN METHOD OF SECURING STRONG COLONIES FOR THE HONEY-FLOW.

I should like to cut this article short; but it would lack in completeness if I did not compare American methods with the Brazilian, of which F. A. Hannemann is the originator. We like to see our hives overflowing with bees when the honey season arrives. Mr. Hannemann tries to accomplish this by massing together a large number of young swarms. The bee common in Brazil has the swarming tendency of the heath and Carniolan. Swarms are the object at the beginning of the season. All the swarms of the day are usually hived into one great mammoth hive; the queens are all caged, and placed about in different parts of the hive, and thus left until the end of the honey season: when one is liberated, all the rest are disposed of. Even if 15 or 20 swarms should have been massed together in the early part of the season, their energies will all be spent by the time the end comes, and only enough bees to make one good swarm will be left, the rest all having been "swapped" for honey and wax. Just how many pounds of honey a given number of pounds of bees store under these conditions I am not able to say; but we have found in our experience that it is more profitable to keep our bees in a more normal condition. We want lots of bees in a hive, it is true; but at the end we are money ahead by hiving 20 swarms into not less than 10 hives, and giving the queens their freedom. Thus our surplus comb honey will be

free from pollen, which can not possibly be the case with the honey obtained by the Brazilian methods, and we shall harvest just as much surplus with the advantage of having more bees left.

We would alter the Brazilian method in other ways to suit our notions. Perhaps we would run the mammoth colonies for extracted honey. The Texas bee-keepers, however, might want to produce comb or chunk honey, as they have a demand for it; but they would have to eliminate the pollen somehow to make it a success. Pollen in honey, evidently, does not seem to be a serious drawback in Brazil; at any rate, conditions seem to favor the Hannemann method.

It might be interesting to learn how Mr. Hannemann succeeded in securing every queen, for this was very essential. The way he did succeed was by his famous bee-sieve, which later developed into the regular queen-excluder as we use it now. But Hannemann made his sieve of wire. He would not use a punched sheet of metal; in fact, he has not ceased to lament and decry the spoiling of his valuable invention in such a way. With his sieve he would sift every swarm, and thus secure each queen and all drones. The cage he used for caging the queens was also only queen-confining, giving the bees constant access to the queens. For this reason the Germans have styled it the Hannemann queen-cage.

Naples, N. Y., August 12.

THE TEXAS STATE FAIR.

Bottling the Honey for the Exhibits by the Apiarian Department at the Fairgrounds.

BY LOUIS H. SCHOLL.

The State Fair at Texas, one of the greatest fairs of its kind, takes place this year at Dallas, October 16 to 31. The management has made great efforts the last few years to have the best bee and honey exhibit ever held in the South. The apiarian department was started three years ago, and has had a steady growth each year, so that the coming exhibition promises to be the best ever held, in spite of the short honey crop.

All who are familiar with exhibiting at fairs, especially when bees and honey have to be sent long distances, are well aware of the difficulties, such as the expensive express rates, breakage of glass packages of honey, observatory hives, etc. This is often very aggravating, not only to the exhibitor, but also to the superintendent and his assistants in the apiarian department, since it is no small matter to wash honey from glass jars and bottles, especially where they are labeled. It is also disagreeable to have bees arrive in observatory hives in some of which the glass sides are broken so that nearly if not all of the bees have escaped. For these reasons we have adopted a new plan which we hope can be made to work satisfactorily. In the first place, the observatory hives

will be furnished by the Fair Association. These will be a part of the permanent equipment, to be kept from year to year, as they can be easily put under lock and key in the department. Bee-keepers will then be required to send only the bees, as requested in the following letter:

Dear Sir:—I am in Dallas preparing for the biggest and best bee and honey exhibit that the South has ever had. In this we want your co-operation. It will not take very much of your time, nor be any great expense to you, yet you will help us do a wonderful thing toward advertising our bees, queens, honey, and wax, and other by-products of the apiary.

We are going to have the biggest show of bees of the different races in one-frame observatory hives that the world has ever seen at one place, and for this purpose we are getting made up here a big lot of the glass hives ready to receive the bees that are sent here. All you have to do is to send the one-frame nuclei in their shipping-cases, and we will put them into the glass hives and care for them in the best possible manner while they are here. In this way we shall get a great number of competitors to show their best stuff, and it will be an advertisement for all who participate. We are writing you this at the present time so that you can prepare your best bees and have them ready to ship to us four or five days before the opening of the fair.

We also want the greatest number of exhibits of different kinds of honey, and we have struck on the following plan: We will procure a large number of white flint-glass jars holding 3 pounds each. All that will be required for the exhibitor will be to send enough honey, 36 lbs., in the regular 60-lb. cans. We will put the honey in the jars, properly labeled, with the number of the exhibitor. After the fair all of the honey will be sold, and that sent by the exhibitor paid for. This will save the risk and expense of shipping glass packages.

As there are premiums on white and amber honey, two cans can be shipped in one case by freight. Include with this shipment other things named in the premium list enclosed—comb honey, wax, vinegar, etc. All these shipments should be sent early to arrive here in due time, while bees and queens are rushed through by express later. Address all shipments, and send all bills of lading to me.

Write me at once a list of what you will send us, so we can arrange for it promptly. Remember the dates of the fair are October 16 to 31, and all exhibits must reach us by the 15th. We will take the best of care of them here.

Dallas, Texas, Sept. 14.

LOUIS H. SCHOLL,

Supt. Apiarian Dept.

As the above letters are sent to all who may have a good stock of bees, it will be possible to get up the biggest show of bees ever held in one place.

The same plan will apply to exhibits of honey. By having an equipment in the apiarian department for filling glass jars rapidly with the honey that is sent, we hope to gain a big advantage in this respect also. Most of the exhibits must be sent several hundred miles, and honey put up in glass must be packed with extra care to guard against the rough handling at the numerous transfer points, thus making very bulky packages, and increasing the shipping expense, and not even then preventing breakage. By procuring suitable jars for exhibition purposes in gross lots or in still larger lots, if necessary, the cost of the glass will be lower. The freight bills will also be low on the honey, because it may be sent in tin cans.

The filling of the jars will be done in the department, and this brings up another point of importance. Honey recently put in glass and set up for exhibition presents a better and brighter appearance than that which has been in jars for a longer time.

We are very confident of success in this plan, and ask the bee-keepers to aid us as much as possible. It rests with the bee-keepers to furnish the material for exhibition. The management of the fair will do their part toward taking the best of care of it.

New Braunfels, Texas.

ALSIKE CLOVER.

Lobelia Inflata the Cause of the So-called Alsike Poisoning.

BY E. VANDENWERKEN.

We of this section of the country have not had as much experience with alsike as have those who live further west. However, I am fully convinced that the poisoning of stock, as has been mentioned, is not due to the alsike but to another source. Years ago I lived in Saratoga Co., N. Y. At that time alsike was unknown, but we had trouble with the white-nosed horses. In some cases the scabby sores were very serious on every white nose. I never saw a dark-nosed horse that was troubled. The vile weed that was responsible for this was known as *Lobelia inflata*. It grows in pastures, and is a plant that is very difficult to exterminate. It is about a foot high and rather bushy, with cream-white blossoms. Little pods hold a number of seeds that look so much like alsike that it would be impossible to separate them if mixed together. I believe that this is the weed that grows in alsike-fields, and that it is the cause of the trouble. It used to be called Indian tobacco, for, although it does not look at all like tobacco, it produces the same sort of sickness if chewed.

There grows in the same pastures another weed, the same height and style, except that the blossoms are a little more fluffy and whiter. This is called the sweet balsam, and some might mistake it for the lobelia, if not familiar with the two plants. The sweet balsam has not such vile properties as the lobelia, for its odor is pleasant, and it is harmless to man and beast.

The lobelia seems to lose its bad effects when it is cut and mixed with the hay. It does not grow much with standing timothy. It thrives best in the pasture.

FRUIT-BLOSSOMS SPRAYED.

Some of the fruit-growers near here foolishly sprayed their trees while in bloom. I saw my bees acting strangely. They were bloated, and were evidently trying to void something. Many of them were lying dead around the outside of the hives. I began feeding every colony considerably to keep the bees inside the hives as much as possible, and in five days they seemed to get over it.

SUMAC, GOLDENROD, AND ASTER.

This year sumac came on in fine shape, and the bees worked it well. I counted ten honey-bees, two yellow-jackets, and a bumble-bee on one bunch, and all were working like beavers. I wonder if bees get honey all day long from sumac. I have seen bees on

some sumac near my home during the whole day, and they all seemed to be getting nectar. I also get at times considerable honey from goldenrod. I never saw so much goldenrod as is now coming on. With the goldenrod and aster my bees will do pretty well this fall. However, I would rather feed my bees sugar syrup than allow them to have much aster honey. I never saw any that was not thin and watery, and it never seems to thicken up.

A LOSS OF BEES FROM STRONG COLONIES.

Why do bees carry out other bees from the strong colonies, and fly off and finally drop them? I can almost hear you say that it looks like a case of robbing. I thought so at first, but as I watched proceedings from time to time I do not believe that these are robber-bees, as they never seem to fight. A bee comes tumbling out of the hive, carrying another bee which seems to be trying to hold on to something to keep from being carried off. These unfortunate bees sometimes release themselves and run back into the hive. If it were a case of robbers, why should this be noticed in the most populous colony? This hive is full of bees which are working well, as they had begun on their second super. I notice the trouble every once in a while. Some days there is more of it than others.

Stamford, Conn.

[The bees carried out are probably the old bees, bees with worn-out wings, or otherwise defective, so that they can not be of much use to the colony. No matter how hard a bee may have toiled for the good of the colony, the moment it loses its usefulness its fellow-workers, without heart or feeling, carry it off and drop it. It can not fly, and to walk back is impossible. It dies for its colony like a hero for his country.—ED.]

WHAT CAUSED THE BROOD TO DIE?

On page 513, Aug. 15, I read a query by B. F. Lewis in regard to brood dying before hatching, and being carried out by the bees. A similar experience prompts me to write.

My experience was identical with his, except that the brood carried out was in the larval stage, about nine or ten days from the egg. As you hint in your footnote to Mr. Lewis' letter at a fault in the queen, I also blamed her; and as she had been indolent in brood-rearing for some time I thought to stimulate her by feeding in order to get a good nesful of brood before I replaced her. I fed four ounces of syrup every evening, and pollen began coming in with a rush, and, to my great surprise, I have not seen a dead larva carried out since. The feeding began three weeks ago, and I am keeping it up.

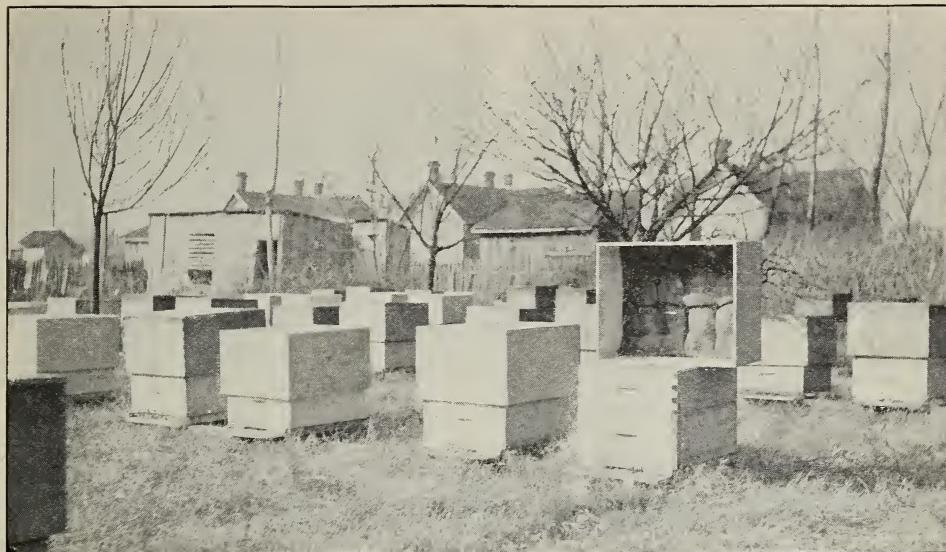
I am wondering if the feeding were stopped if the brood trouble would set in again. I think it would, as I blame bad water for the trouble, as there is a run about 200 yards from my place, which is a veritable sewer, at which I think my bees watered; and as they get enough pure water in the syrup to meet their needs they are not compelled to carry this vile run water, with the result that the brood is healthy.

Pittsburg, Pa., Aug. 30.

R. MCCULLOUGH.

[We can hardly believe that the sewer water was responsible for the trouble. We should rather think it was a lack of pollen. If you stop feeding, and no brood dies, the trouble is not in the queen. If brood continues to die with plenty of pollen in the hive we would replace her.

One thing is certain—that if sewer water causes the brood to die in the hive, you would find brood dying in other hives also.—ED.]



SMITH'S LATER AND IMPROVED WINTER CASES.

KEEPING COMBS AND BEES DRY THROUGH THE WINTER.

The Telescope Cap in Combination with a Permanent Cork Cushion; the Advantage of Warm Covers and Cold Walls and Bottoms.

BY JAY SMITH.

All will agree that one of the chief essentials to successful apiculture is perfect wintering. Just what perfect wintering is I do not claim to know; but after a number of years of careful experimenting I have a system that gives such good results that I can not imagine any thing better for this latitude. Here our coldest weather is about zero. This year, six above was the coldest. As has been said, *moisture* and not *cold* is what kills bees in winter. My experiments have proved this so conclusively that this point can not be emphasized too strongly.

Six years ago I had some large outer cases made with removable covers, Fig. 1. They were large enough so that I packed about six inches of planer-shavings around the sides and top. Some were made for one hive and some for two. As can easily be seen, these confined the heat. I left the entrance wide open. In the spring I looked into the hives, and was surprised at the number of dead bees. Each hive seemed to have about a hatful of dead bees, and they were all covered with mold in a pile on the bottom-board. The colonies were all weak, and one was queenless. As soon as warmer weather came on they built up rapidly and did very well. I was satisfied that this was all right for spring, but was not all right for winter.

I will not go into detail and tell all the plans I tried, but will skip over to the plan I have used for the last few years that has given the best results. I use a regular deep telescope cap. The cushion is the thing I wish to describe.

I have tried several kinds of material, including forest-leaves. These were good, but they were heavy, and it was hard to make the cushions flat, and this tilted the caps in different directions and gave the apiary a bad appearance. I read in GLEANINGS that ground cork was good; but, so far as I could learn, no one had tried it and could not report from experience. I decided I would try it if I could get the cork. The



FIG. 1.—JAY SMITH'S ORIGINAL FORM OF WINTER CASE.

grocers ship grapes in from California, packed in cork, so I tried to have them save it for me. But they had so little that they did not care to bother, and threw it away. Last year I thought of a wholesale fruit-dealer and went to him. He said he usually gave away and threw away several wagonloads every year. He then had on hand nine barrels, and I bought the whole lot—barrels, cork, and all—for \$4.50. This was enough for 60 cushions. I mention this so that any bee-keeper living near a city may know where to get cork.

We found the greatest trouble with the cork was that it was hard to make it stay in place, for it would run from one corner to the other as the cushion was handled. This was overcome by sewing it through and tying it with string the same as a quilt. To fasten them into the top of the telescope cap I paint the inside of the telescope and put the cushion in, and then press it down on the hive. When the paint is dry the cushion is held there permanently, Fig. 2. For cushions I get sugar or coffee bags made of burlap. I get them from the grocers for 2½ cts. apiece. By cutting off the end a few inches they just fit a ten-frame hive.

Now, the point I wish to emphasize is this: The top of the hive must be the warmest part or the moisture will condense there; and all winter long water will continue to drop on the cluster of bees. It does not take much thinking to know the results. The sides and bottom of the hive must be kept cold so the moisture will collect there and run out of the entrance. The reason that the old large cases packed with shavings failed was that the sides were as warm as the top, and the moisture condensed at the top as well as the sides.

To test this still further I left a few hives with no covering on top, except the regular hive-cover, till the middle of January. One cold day I examined these and found that all the tops of the frames were wet, and water was standing on several of them. On one frame was a little puddle of water; and as I opened the hive the water ran down the side on the frame directly on to the cluster of bees. Those with telescope caps and cork cushions were as dry as could be, and the moisture had condensed on the bottom and sides of the hive. I use the thin super cover on top of the hive, and let the bees seal it tight.

This plan is as beneficial in summer as in winter, as it keeps off the hot sun. Last summer the comb melted down in several hives that were unprotected, and the bees had to suspend work there. On cold mornings, also, the bees will work much better in a hive that is protected in the manner described. In the illustration it will be seen that I use a super with shallow extracting-frames full of honey for winter. I have tried two hive-bodies as well as this, but like the one hive and super plan the best for early spring breeding, as well as in winter, as will be given in a future article. For winter it is especially good, for the reason that it gives

a cross-passage for the bees right in the center of the cluster.

Vincennes, Ind.

FIELD MEETING AT HAYDENVILLE, MASS.

BY A. E. WILCUTT.

I am sending you some pictures taken at the meeting of bee-keepers at Haydenville, Mass.; also a clipping from a local paper. I am sending three pictures which you can use if suitable.

Swift River, Mass., July 27.

A meeting in the interest of bee-keeping was held Saturday, July 10, at the apiary of W. M. Purrington, in Haydenville, under the auspices of the State Board of Agriculture and the Massachusetts Experiment Station. The attendance numbered about 100, and much interest was shown in the discussion. The principal address was made by Dr. Burton N. Gates, whose subject was "The New Bee-keeping, the Possibilities in Massachusetts." Dr. Gates spoke on the improved methods of bee-keeping and extension of the industry, which he considered both possible and profitable. Dr. W. P. Brooks, of the Amherst Agricultural College, gave some of his experiences, and Herbert Cary, of Colrain, exhibited specimens of queen-bees and samples of honey. He also showed an improved shipping-case. Dinner was served at noon by the women of the Congregational Church, in the vestry.

In the afternoon a Hampshire, Hampden, and Franklin association of bee-keepers was organized by election of the following officers: President, Prof. W. P. Brooks, of Amherst; vice-presidents, F. A. Bardwell, of Amherst; E. A. Loveland, of Greenfield; H. F. Wright, of Agawam; secretary and treasurer, W. M. Purrington. The association will be devoted to the promotion of bee culture, which Dr. Gates considers as feasible in Western Massachusetts as in Vermont; the conditions in Vermont are held to be second to none except those of some sections in New York. The association will endeavor to secure State inspection of hives with a view to the extermination of foul brood, which has become troublesome in some sections of this State.

TAKING OFF HONEY.

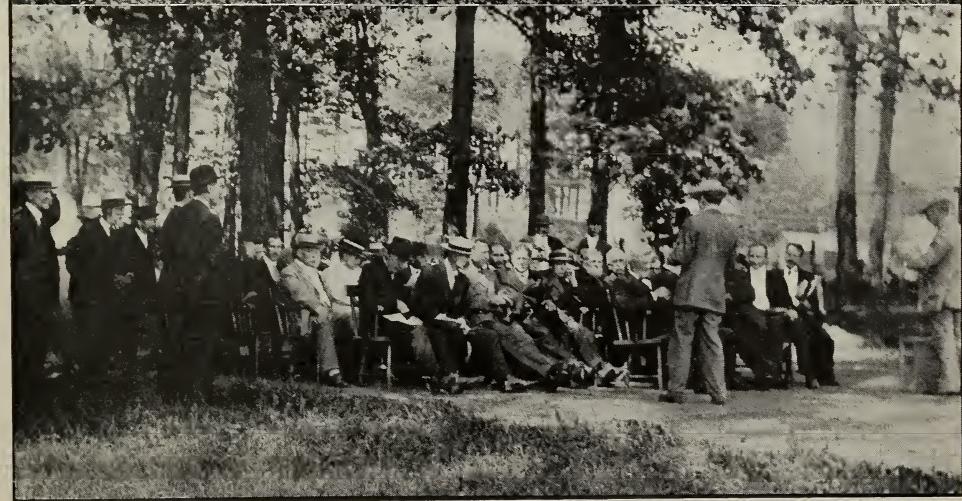
How to Determine Whether Supers are Ready to Come off, Without Tearing the Hive Apart.

BY E. R. ROOT.

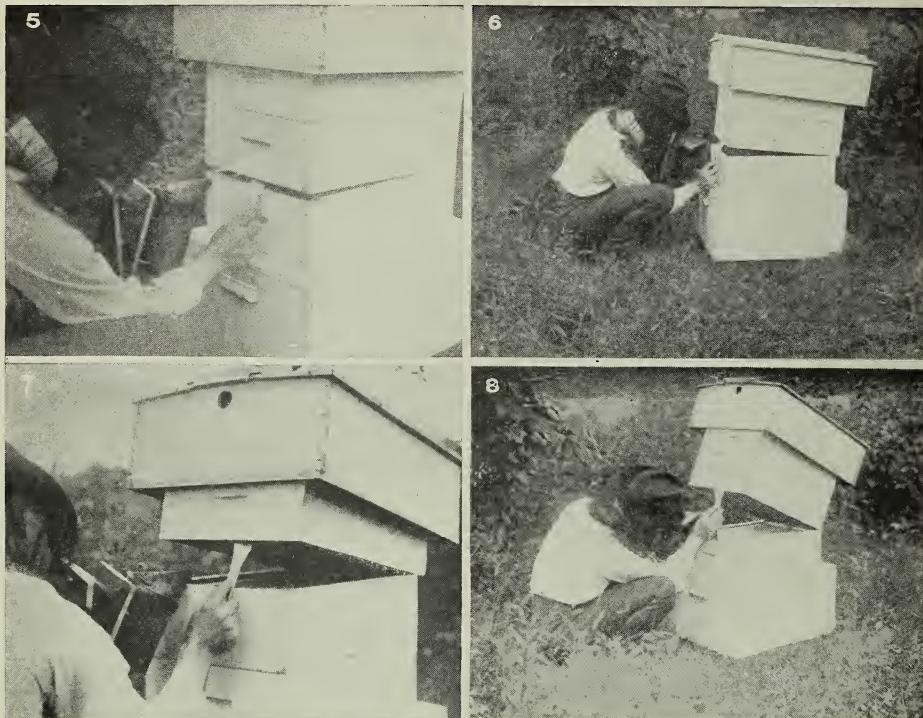
When one runs a series of outyards it is necessary, so far as practicable, to use short cuts. All false motions should be eliminated, and the work should be so planned that there will be no unnecessary running from one end of the yard to the other.

A good many, in working for extracted honey, operate on the tier-up principle, leaving the supers all on the hives until the season is over. By that time it is important that robbers be given no opportunity to help themselves to sweets, when the honey is taken off; but before doing so the condition of the supers should be determined in advance.

Our south yard was run for extracted honey in shallow supers. As we were short of help, it was handled almost entirely by our editorial force. In order to keep ahead of the bees it was necessary to make an examination of the supers from time to time. Toward the early part of the season we would place the empty supers under those



FIELD MEETING OF BEE-KEEPERS IN WESTERN MASSACHUSETTS.



DETERMINING THE FILLING OF THE SUPERS AND WHETHER THEY ARE READY TO COME OFF

partly filled. As the season began to draw toward its close, the process was reversed—that is to say, the empties were put on top of those partly filled.

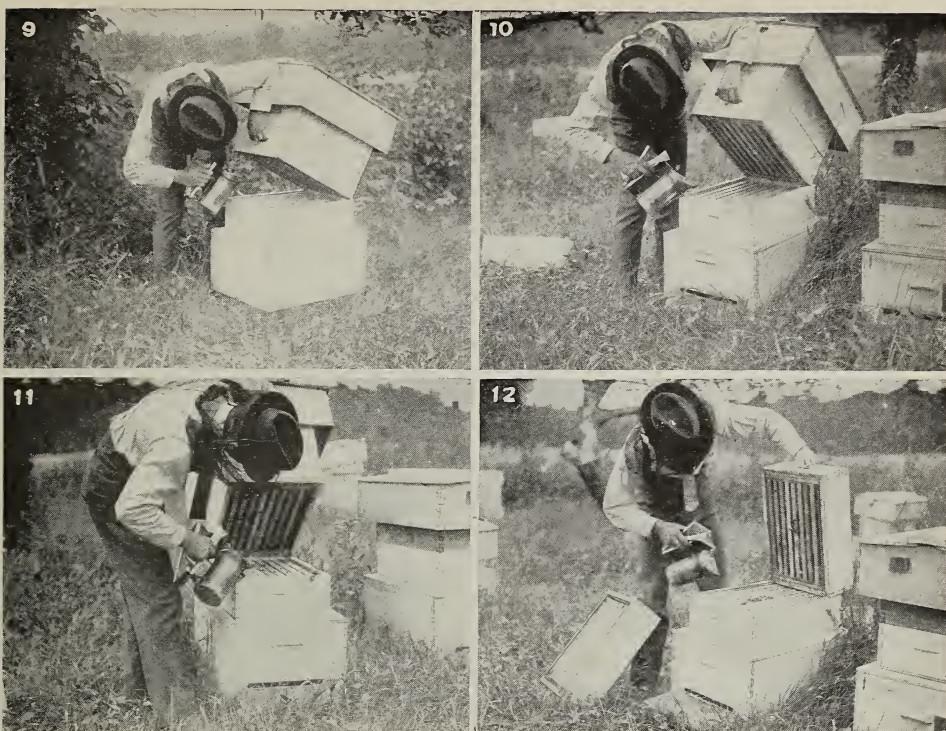
In order to determine the amount of honey in any super, it is not necessary to take off the cover and pull the hive apart. If it is tiered up four and five stories high, it involves a large amount of labor and considerable lifting to pull the supers off one by one, inviting the attention of robbers in the operation. If one is supplied with a good strong steel hive-tool and a smoker, he can get a fair idea of the filling of any super, without even removing the cover from the hive. In the series of snap shots shown herewith, the reader will be able to gather, almost at a glance, the exact method that we have used in determining what the bees were doing.

Let us take a concrete example. We will start with the hive shown in Fig. 5. It has three supers. The middle one is the one on which the bees began work first, and at the time of this examination it should be completely filled. The bottom super was placed under after the middle one was about half filled. The third super was put on top because there would probably be not more than a week more of honey-flow.

At this time we desire to know what the

bees have actually done; so, without removing the telescope cover on top nor the super cover directly beneath, we extend the thin blade of the hive-tool, broad end, between the two lower supers *at the back end of the hive*; for one should always endeavor to keep out of the flight of the bees. This is gradually shoved in until the blade has been pushed in anywhere from $\frac{1}{2}$ to a full inch. A gap is now formed, of approximately $\frac{1}{6}$ inch, just wide enough so that a little smoke will drive back the bees. A slight pressure downward separates the two upper supers about an inch at the back end, when more smoke is blown in. The tool is pushed down a little further, making the gap a little wider still. See Fig. 6. But we are not quite satisfied as to the condition of the supers, so we push the tool and supers upward, as shown in Fig. 7, until we have the hive-tool in position as shown in Fig. 8. Here it acts as a prop, when, with the intelligent use of the smoker, we can drive back the bees enough so that we can see the condition of the two supers, or enough to determine whether the bees need more room.

But suppose we are not quite satisfied. We turn to the position as shown in Fig. 9, disregard the hive-tool, and lift the two supers higher, the hive-tool falling on the ground. When doing this we slide the two



LEARNING THE CONDITION OF THE HIVE WITHOUT REMOVING THE COVER OR PULLING THE HIVE TO PIECES.

supers about an inch forward so that the back end will fulcrum on a safe bearing. If the super is slipped back, as shown in Fig. 7, it can readily be seen that it can not be tilted up very high without sliding off back. See Figs. 9, 10, 11.

Usually an examination of this sort is quite sufficient. If the supers are not filled they are quietly let back into place, using sufficient smoke to drive the bees away so they will not be crushed as the hive parts come together again. The operation as shown in Figs. 5, 6, 7, 8, 9, 10, 11, is then repeated with other hives, taking from 30 to 60 seconds per hive. At no time have we lifted only a part of the dead weight. When the supers are held at an angle the load is on the fulcrum point of contact.

Fig. 12 shows the method employed when supers are apparently well filled and ready to come off. The top super is removed and leaned up against the leg of the operator. The middle super that has been filled can now be taken off; but before doing so a second examination is made, as shown. It is set off, when the bottom super may also be removed if ready. If not, the top super is put back, the idea being to confine the bees to as small a super capacity as possible as the season draws to a close, in order to make the bees finish their work.

Fig. 13 shows a slightly different pose from that indicated in Fig. 8. While the position of the operator is somewhat cramped, it is true, yet it is much easier than tearing down the hive, super by super, and replacing the same.

In Fig. 14 we have a case where the season was closing rather abruptly. The bees have only partially begun work in the top super. To leave it on would mean that all the supers would have honey in, and none of them quite completed. Accordingly we shake the bees out of the top super, place a thin super cover on the two lower supers, place the super just shaken on top, and the regular cover on it. The hive is now left until we can determine a little more about the season. If there should be some good rains and warm weather, the season may take another start. In that case the super cover that was placed between the top super and the two below is removed, when work will be resumed in the third super. If we were sure that the season was drawing to a close, the top super should be removed in the first place.

HOW TO PUT ON ESCAPE-BOARDS.

In going through bee-yards we have noted the fact over and over that some bee-keepers have an awkward way of putting on escapes. They will pull the hive apart, super



FIG. 14.—SHAKING BEES OUT OF A SUPER.

by super, place the escape on the brood-nest or on a super partly filled, then one by one put back the supers. If no honey is coming in, this will probably mean that robbers will get started.

There is no need of removing any super, nor a cover, for that matter. All that is necessary is to apply the principles illustrated in Figs. 5, 6, 7, 8, 9, 10, 11. The following additional series of what we may call moving-picture snap shots will show the orthodox procedure for putting on escape-boards. First, the hive-tool is entered between the pair of supers where the escape is to be placed, as shown in Fig. 5. At the time of doing this the board is placed conveniently near, usually leaning against the knee of the operator. The hive-tool is entered between the two parts of the hive, smoke is blown in the gap thus made, when the smoker is set down on the ground and the hive-tool is left sticking in between the two parts. The left hand lifts the hive up at one end, giving it a slight hitch forward at the same time. The escape-board is now picked up and inserted in the gap made as shown in the second posture of the next engraving. It is shoved as far as it will go when the upper part of the hive or super is let down. See position 3 and 4. The last step is to bring the bee-escape board and the upper part of the hive in alignment with the lower part. All of this is very easily done,

with no heavy lifting. It ought not to take more than half a minute to the hive.

At one time one of our men went down to an outyard to put on bee-escapes. He used the old way of pulling the hive apart; and as it was during a dearth of honey he got a good many robbers started, and not a few stings. We later sent another man down who put on twice or three times as many escapes in the same time without a robber showing, and without any stings. It is needless to say that the last man used the plan shown in the illustrations.

FULL SHEETS VS. STARTERS FOR COMB HONEY.

Can Really Good Comb Honey Be Produced by the Use of Full Sheets? a Spirited Rejoinder.

BY DR. C. C. MILLER.

I have read with very much interest the article of F. Greiner, page 528. His idea of "giving due consideration to all—producer, dealer, and consumer," is certainly the right one—hard to do that at all times unselfishly, "not looking," as Paul says, "each of you to his own things, but each of you also to the things of others." The greatest good to the greatest number is not always considered.

There's the matter of glassed sections—all

ways seemed to me like a dead loss, no matter who stands the loss, for no one receives enough benefit from the glass to pay for the extra cost. It isn't fair for the producer to make a profit by it if the consumer must stand five times as much loss.

The chief item considered by Mr. Greiner is the use of foundation, and I admire the spirit with which he looks out for the interest of the consumer, even if it has a string attached to it in the way of a final rebound upon the producer, caused by the reputation of his honey. I think, however, that I know Mr. Greiner well enough to believe that he has a real regard for the interest of the consumer. In that I am in hearty sympathy with him, although I think some of his views are out of just proportion.

He speaks of *brood* foundation occupying the entire section. That's a new one on me. I never heard of it before. If that sort of thing is done in his locality, I don't wonder that he's stirred up over it, and inclined to the other extreme of using no foundation at all. The strangest part of it is, that people who produce sections of this sort can find a seller who will "pat them on their backs and compliment them for their great (?) achievements, and buy their product before it is off the hive." Surely no dealer ought to be fooled the second time by such a product. Besides, it is a loss to the producer to put in so much extra wax to be sold at the price of honey.

With regard to having sections filled clear out so that the row of cells next to the wood is sealed, there is chance for difference of opinion. There is no question that a section thus filled out looks better in the grocery;

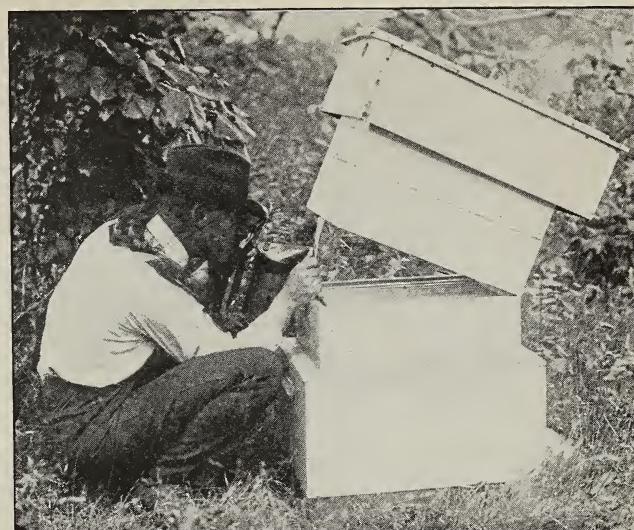
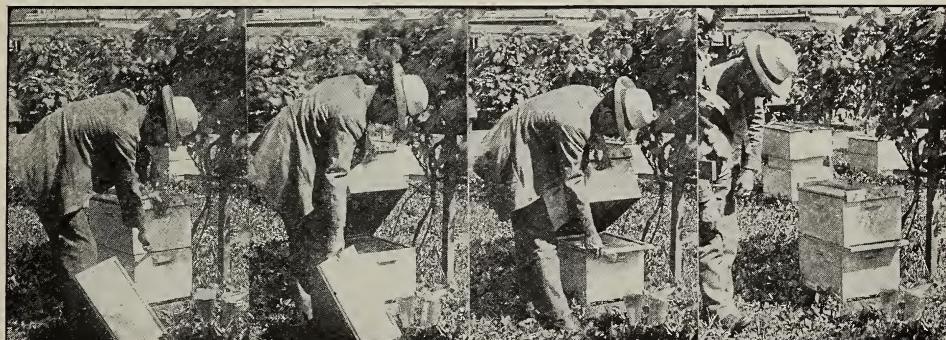


FIG. 13.—HOW A SMOKER AND A HIVE-TOOL WILL ENABLE ONE TO LEARN THE CONDITION OF THE SUPERS AT ONE GLANCE.

but—on the table? A section with no outside cells filled and sealed can be cut out of the wood and placed upon a plate with not a drop of honey dripping from the sides, while the other kind will be dripping all around. Tastes differ, however, and some may like the sight of the dripping edges. Then there's the matter of waste. It may be small; but you can not cut out the very full section without at least some waste from honey adhering to the wood.

Mr. Greiner says, "Really good comb honey can not be produced with full sheets or half sheets of comb foundation, no matter what the dealers may say." That's a pretty sweeping statement. I don't believe all producers agree with Mr. Greiner. No more do all consumers. Certainly I do not, and I've had a very full opportunity of knowing about the matter. I began using sections about as soon as I heard of such a thing as sections,

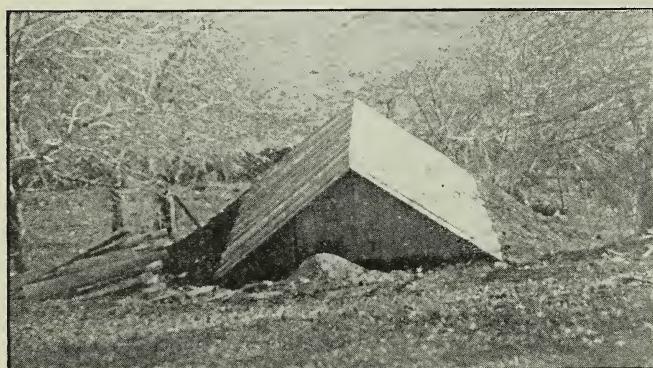


THE CORRECT METHOD OF PUTTING ON ESCAPE-BOARDS.

and I've always practiced filling them full of foundation. So I have produced a good many tons of sections with full sheets of foundation, and I think they were "really good." At the World's Fair in Chicago they took a first premium. I agree, however, with Mr. Greiner that the final test ought to be whether the consumer thinks they are really good. If the grocer, for a quarter of a century, sells the same brand of honey to his customers he ought to know from them what they think of it, and in turn the jobber ought to learn from the grocers.



HULL'S BEE-CELLAR, BUILT IN A SIDE-HILL; CAPACITY 200 COLONIES.



REAR VIEW OF HULL'S BEE-CELLAR.

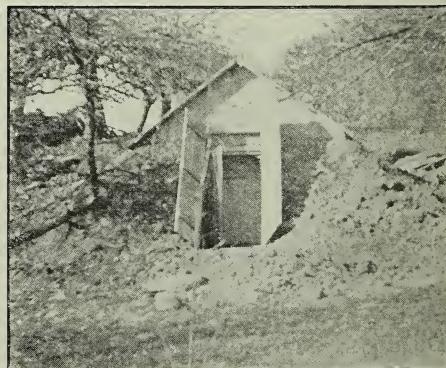
Now if, after that length of time, the jobber thinks it advisable to send around to his customers a printed card saying that a shipment of Dr. Miller's honey has arrived, is not that pretty strong evidence that the consumer thinks the honey is all right?

After all, what great thing is there to object to? People eat honey and wax (in the form of comb honey) in preference to eating it pure; at any rate, so many of them prefer the wax with the honey that the price of the wax and honey is much higher than that of the pure honey in the extracted form. If the wax that is put in by the bees when left entirely to their own devices is accepted as all right, why should such serious objection be made to a slight addition of precisely the same material?

I am free to confess that, for some purposes, as in hot drinks, I would rather have no wax; but when eating comb honey in the

usual way I'm not sure I could tell, after the honey is in my mouth, whether there is foundation in it or not. Certainly, if I were producing section honey for my own table, with no thought of selling an ounce, I would want the sections filled with foundation.

Mr. Greiner admits the use of a starter of foundation, without specifying the size of the starter. Certainly the starter can not half fill the section,



FRONT VIEW OF HULL'S BEE-CELLAR.
Ten inches of sawdust cover the ceiling of the bee-room.

for in that case he says the honey is not "really good." Probably it is fair to consider that the honey below the starter may be considered really good; but as the upper part, where the starter is, is not really good, that condemns the whole section as being not really good.

So the half-depth starter must be rejected and a shallow one used. But however shallow that starter may be, *throughout its depth the honey is just as bad as is any of the honey in a section produced with a full sheet of foundation.* That being the case, the logical inference is that, to produce "really good" comb honey, not even a small starter may be used; and, to be consistent, none whatever should be used. No use to object that even a small starter is essential. Tons of comb honey were produced before foundation was known, and can be again.

Admitting all the badness that may be charged against foundation, if it be right to use a starter, however small in size, and if it be right to use it because it is for the advantage of the producer, then I believe it is right to use a larger starter, even to filling the section, if the producer thereby has a larger advantage that is not overbalanced by a greater disadvantage to the consumer.

My own belief is that using full sheets of foundation is of such advantage to the producer that it overbalances, several times, any disadvantage to the consumer, and hence full sheets of foundation may be used without any violation of the golden rule.

As to the matter of reputation, as already intimated, if the continued sale in the same market, for a quarter of a century, of sections with full sheets of foundation, has only succeeded in establishing more firmly the demand for them, there seems little ground for anxiety as to the future.

Marengo, Ill.

BEE-CELLAR BUILT IN A SIDE-HILL.

BY J. D. HULL.

I am sending several views of my bee-cellar that I built last fall. It is built on a side-hill, as you can see. The floor overhead is covered with ten inches of sawdust. It cost me a little less than \$30.00, besides the work. It is large enough to hold 200 colonies. I have 80 in it this winter; they seem to be wintering very well. The temperature averages about 46.

Honesdale, Pa., Jan. 15.

CARPENTRY FOR BEE-KEEPERS.

Hive-covers.

BY F. DUNDAS TODD.

Since I came west I have done more thinking about hive-covers than about any other part of hive construction, because of the peculiar climatic conditions of that part of the Pacific coast with which I am familiar, the most marked feature of which, at least to

me, is the decided drop in temperature that occurs the instant the sun disappears below the western horizon. In Southern Oregon, during the summer months, the thermometer uniformly falls about 30° between 8 and 11 P.M., while in Victoria the drop is a little less. In Medford I have seen 103° in August, but the average afternoon temperature ranges between 90 and 100°, with a midnight reading of about 60°. In Victoria, in the summer months the night temperature is about 52°, the afternoon hovering around 80°.

In both localities, during the winter months, in my experience, the night record on the thermometer is round about freezing-point. In Victoria, during February and March, with wonderful constancy, day after day we find 48° recorded as the maximum, then in April the figures will run from 50° to 60°. It is very interesting to watch the bees and see how accurately they reflect the thermic conditions. At 44° there is not a sign of life at the hive entrances; at 45° a few bees will venture out, increasing in numbers with each degree of rise, until at 48° flight is very free. Of course, much depends on the presence or absence of clouds, for with the former there is little flight, even at 50°.

A little digression here may not be altogether out of place. While this article was on the stocks a little discussion was going on in this magazine as to whether or not bees hear, and there was brought into the controversy the fact that the bees fly home on the approach of a heavy thunderstorm. Let me tell of an experience I had in Illinois in July, 1907. About noon one very hot day I was working among the flowers when there came up one of these swift storms for which Chicago is rather famous—one of the kind where a cloud appears on the western horizon, and in anywhere from twenty to thirty minutes the storm is right overhead. This particular one came up awhooping, and so I at once got close to the hives to see what the bees would do about it. Soon the thunder was crashing in terrific peals, while the sun shone as brightly as ever, and the bees never relaxed their flight for an instant. I made up my mind I would probably lose many thousands of the little insects in the next few minutes; but just as the storm-cloud reached the sun I saw one of the prettiest sights that ever my eyes feasted on. About 30 feet in front of my hives stood two large ash-trees over which many of the bees usually flew, and now I saw a broad dark band reaching down from the top of these trees to the hive-entrances, resembling to my mind a six-foot-wide mill-belt. And then the wonderful celerity in getting in out of the wet! I was simply astounded; for when the deluge fell there was not a bee in sight. These bees did not pay the slightest heed to the roar of the thunder; but when the sun ceased shining, they simply scooted for home at a gait that was a rusher.

To return to my subject. Such cool conditions as I have been describing, especially

in the summer nights, must have decidedly retarding influences on the economy of the hive, and I have been assured by bee-keepers in both localities that in the very early morning the supers are absolutely deserted. Now, this is a serious loss of time in a season that is very short—just a month of honey-flow in Victoria, with practically a dearth of nectar from July 10 until dandelion and fruit-bloom in April, and so a heat-conserving cover is worth inventing, as I think it will pay big returns.

Again, in both regions the summers are dry—how dry one has to experience to understand. I have dipped a sheet in water, then hung it over the line, and found it bone-dry in half an hour in autumn days in Medford, where no rain falls from the end of April to the middle of November. Victoria is similar, but the dry season lasts only five months. The winter season in both regions compensates very emphatically by liberal rainfall. In Southern Oregon, for thirteen weeks or so Jupiter Pluvius never lets up for one instant, but night and day pours a gentle rainfull that may be comforting to natives, but gets on the nerves of those who have not been accustomed to such a fluid consistency. In Victoria things are better arranged in the wet season, for it very accommodatingly rains at night, but is usually fair for the greater part of the day.

Understand, I am not complaining about the weather. I am merely trying to show the climatic conditions in so far as they have a bearing on the problem of hive-covers, for the bee-keepers east of the Cascade range have conditions that are different; but among the many readers of GLEANINGS, especially in foreign lands, there must be many wrestling with a similar problem, which is, to secure a warm cover, simple in construction, inexpensive in cost, and one that will stand extremes of wetness and dryness when the bees occupy the same stands all the year round.

My first venture was with a flat cover made of wood, the top being of one piece of $\frac{3}{8}$ -inch fir, with a rim $1\frac{1}{4}$ inches deep, made from $\frac{3}{4}$ -inch lumber. In two months over half of them were cracked and split beyond remedy—not a nice proposition with which to face a wet season. The result is, I am going to try this summer a deep cap cover with a galvanized-iron roof, and I am in hopes it will be a good thing. An Australian I have met here says such a roof covering lasts in the land of his birth at least a score of years, and I think about that duration will be good enough for me.

In designing this cover I decided on an air-space of $\frac{1}{4}$ inch all round the sides of the hive, and the same on the top—in fact, with the super-cover in place I have a double air-space above the hive. I wanted also to protect the joint of the divisible hive, so the cap is made $7\frac{1}{2}$ inches deep, and when in place rests on cleats that are nailed round the lower division exactly one inch below the top edge. These cleats are made from lumber $\frac{3}{4} \times 1\frac{1}{2}$.

The sides of the cap are of wood, the specifications being—

2 pieces $\frac{1}{2} \times 7\frac{3}{4} \times 21\frac{1}{2}$;
2 “ $\frac{1}{2} \times 7\frac{3}{4} \times 14\frac{1}{8}$.

The galvanized iron is bought in sheets 36×96 , gauge 28, and costs me in Victoria \$1.35. It is cut into eight pieces of equal size, 18×24 , and thus the iron overlaps the wood sides a little over one inch. This surplus is bent at right angles to the roof, so that it slips down over the wooden sides. The method of bending the metal is very simple. Out of 2×4 lumber, smoothed on all sides, cut two pieces $15\frac{1}{2}$ inches long, and two pieces $21\frac{1}{4}$ inches long. From these, by means of a half-joint, make a frame the exact size of the horizontal dimensions of the cap. To turn up the edges of a sheet, lay this frame in the middle of it, then with a pair of snips cut from the margins of the long sides to the corner of the frame. With the fingers start the upward bend of all four sides. This done, lay the head of the hammer flat on the bench and swing it smartly against the bent iron, which will promptly go into place. The lugs at each corner may now be lapped over, but I prefer to do this part of the work when the iron roof is in position on the body, as a closer fit can then be secured. The nailing is done with $\frac{3}{8}$ -inch galvanized iron nails clenched on the inside; but for additional security the edges under the lap are fastened with $1\frac{1}{4}$ -inch cement-coated nails.

Below this cap cover I use a super-cover made of $\frac{1}{4}$ -inch spruce, $13\frac{1}{2} \times 19\frac{1}{4}$, the edges of this being reinforced by strips of the same thickness, and $\frac{1}{8}$ inch wide. This cover is placed on the hive with the strips underneath, resting on oil-cloth at present, but probably I will try some roofing material this summer, so as to get a dead-air space. Now, there is one inch above the cleats in the lower division; $5\frac{1}{2}$ inches is the depth of the upper division, and the super-cover is $\frac{1}{2}$ inch thick—total, $7\frac{1}{2}$ inches. But the cover is $7\frac{1}{4}$ inches deep, so we have at least $\frac{3}{8}$ inch between super-cover and roof of cap.

I can see only one drawback to the use of this deep cover, which will be when I come to add supers; but I will probably then protect all the way up by inserting ekes so as to have the whole hive enclosed in an air-space. As a matter of fact, I am working that idea at the present moment (March), with a few hives that need feeding, which is being given them from above.

Victoria, B. C., Canada.

CONVENTION OF PENNSYLVANIA BEE-KEEPERS.

BY A. F. SATTERTHWAIT.

The sixth annual convention of the Pennsylvania State Bee-keepers' Association was held in the P. O. S. of A. Hall, Lebanon, Pa., Sept. 8 and 9.

Quite an enthusiastic body of members and visitors was present, among them being

Prof. H. A. Surface, President of the Association; Vice-presidents Beard and Hornor, active respectively in the Lebanon and in the Philadelphia Associations; Dr. E. F. Phillips, in Charge of Apiculture, Washington, D. C.; Dr. S. P. Heilman, Secretary of the Lebanon County Agricultural and Horticultural Association; Mr. Wm. A. Selser, widely known in apicultural circles; Messrs. Rahman, Rambo, Cassel, and Snyder, of the Philadelphia Association; Mr. J. H. Miller, Ex-president of the Lebanon Association, and Mr. E. L. Brown, their efficient secretary; Messrs. Hacker, Schilling, M. F. Smith, Wengert, Klee, and others of Lebanon or near-by points; Messrs. Watson and Shirk, of Hanover; Prof. H. C. Klinger, for two years president of our association, and a number of ladies, among them being Mrs. H. K. Beard and Mrs. M. L. Laudermilch.

The program was as follows:

Wednesday afternoon, business.

President's address, Prof. H. A. Surface, State Zoologist, of Harrisburg. Election of officers.

Wednesday evening, address of welcome, by John H. Miller, Ex-president of the Lebanon Bee-keepers' Association, of Myerstown.

Response by the President.

The Distribution of Brood Diseases in Pennsylvania, by Dr. E. F. Phillips, in Charge of Apiculture, Washington, D. C.

Origin and Progress of the Lebanon Bee-keepers' Association, by E. L. Brown, Secretary, of Lebanon.

Apiculture in Juniata County and Vicinity, by Prof. H. C. Klinger, Ex-president of the State Association, of Liverpool.

Fruit and Honey: Can what you Can, by Mrs. H. K. Beard, of Manheim.

Thursday morning, Accomplishments and Aims of the Philadelphia Bee-keepers' Association, by F. Hahman, of Philadelphia.

Qualities to be Secured in Queen-breeding, by Penn G. Snyder, of Swarthmore.

Extracted Honey, by Harold Hornor, of Jenkintown. Honey-dew and the Pure-food Law, by W. A. Selser, of Philadelphia.

Conditions of Honey Production in Lebanon and Lancaster Counties, by H. K. Beard, of Manheim.

Thursday afternoon, at an apiary of Wayne Schilling, of Lebanon. Demonstrations were given in the methods of handling bees, by Prof. Surface and Messrs. Schilling and Penn G. Snyder. Queen-hunting contests were entered into by Messrs. F. C. Miller, E. D. Kurtz, E. F. Hackett, and O. H. Smith.

In the President's address, Prof. Surface gave certain fundamental rules for the bee-keeper to observe, the "golden rule" being to keep every colony strong.

The result of the election of officers was a continuance of the officers of the past year, namely: President, Prof. H. A. Surface; First Vice-president, Mr. H. K. Beard; Second Vice-president, Mr. Harold Hornor; Third Vice-president, Mr. Geo. H. Rea; Secretary and Treasurer, A. F. Satterthwait.

Dr. Phillips illustrated his address on the distribution of brood diseases in Pennsylvania by the use of a map of the State, with colors showing which counties were known to be infected by the one or the other of the two more destructive diseases; which counties had both, and which had none.

Mrs. Beard had a number of samples of preserved fruits, illustrating her paper on the canning of fruits and vegetables with honey. Mr. Selser showed samples of honey with varying proportions of honey-dew, and urged every bee-keeper to make himself safe

from loss by the use of honey-dew honey on the market or winter stores. Much evidence was shown of widespread loss from the gathering of honey-dew this season.

The historical sketches of the Lebanon and of the Philadelphia associations were valuable, as were also the several other papers.

Following the prearranged session at Mr. Schilling's apiary, quite a number of members visited the orchards of Mr. H. C. Snavely, Ex-president of the Pennsylvania State Horticultural Association, resident near by, and were accorded a most liberal welcome. These orchards afforded an excellent object-lesson of the possibilities of producing choice fruits, irrespective of adverse conditions when right methods are wisely applied.

The Association is to meet next year with the Philadelphia Bee-keepers' Association, in their usual meeting place, the Philadelphia Commercial Museums.

At this meeting it was agreed that, while greatly inconvenienced in our business by the passage of the present pure-food law, on account of the requirements of said law compelling us to brand accurately, if at all, each bottle and can of honey put up, with the exact flowers or honey-flow from which it was gathered, thus entailing the purchase of new and the relabeling of old packages, this has been a great benefit to our business, establishing more confidence in the honest and correct labeling of our product and more confidence between the producer and consumer.

Therefore it was resolved that we highly commend the action of Dr. H. W. Wiley in securing this pure-food law, and his untiring efforts to have it enforced in such a way as to make it highly beneficial to the consumer. It was further resolved that we will do all in our power to assist Dr. Wiley in his noble efforts to have an honest brand on every package of food put up.

Further resolutions, prepared by the Committee on Resolutions, were adopted as follows:

Resolved, That we thank the Lebanon County Bee-keepers' Association for their kind hospitality in entertaining at this our annual meeting.

Resolved, That we thank the press for their courtesy in publishing the proceedings of the meeting.

Resolved, That we thank the Department of Agriculture, Washington, D. C., for the assistance they gave us through the work of Dr. E. F. Phillips in the investigation of bee diseases.

Resolved, That we thank the President and other officers of the association for the faithful performance of their duties, and for their efforts in trying to secure the passage of a foul-brood law.

Resolved, That a copy of these resolutions be sent to the respective parties mentioned in these resolutions, and to the Lebanon press for publication.

WM. A. SELSER, }
H. C. KLINGER, } Com.
JOHN H. MILLER, }

At a brief session of the association, held at the orchards of Mr. Henry C. Snavely, Cleona, Pa., the following resolution was adopted:

Resolved, That we thank Mr. Henry C. Snavely for his courtesy and liberality in welcoming us at his orchards, and explaining at length his methods in securing most gratifying results in the production of fruits.

Middletown, Pa.

SIZE OF HOLES IN QUEEN-CAGES.

I agree with your opinion, page 478, in reply to E. C. Lawrence in regard to holes in queen-cages. I got six from a dealer who uses cages without holes bored. I bored $\frac{1}{8}$ inch myself, yet bees got stuck, and I lost two queens, and almost two others, had I not looked in time to release them. The double cages are all right. Angelica, N. Y., Aug. 14.

C. T. OHLINGER.

HEADS OF GRAIN FROM DIFFERENT FIELDS

WHY THE BEES OF A NEWLY HIVED SWARM MAY FIGHT.

Referring to p. 475, Aug. 1, I think I can answer the puzzle, as I have had some experience similar to that of Mr. Wheeler. All practical bee-keepers know that bees, after they are stung, have a fashion of drawing up and looking shorter (and darker too if of the yellow-banded race), and very much smaller than before, whether they are filled with honey or not. My first suggestion is this: The swarm issued all from one hive, so far as can be observed; but, more than likely, a small after-swarm was hanging on the limb unobserved by him, and the issuing swarm settled with them, which they would be almost sure to do. Then when hived, the bees of the big swarm which had a laying queen stung to death the bees of the after-swarm, which had a virgin queen. This has been my experience in nine cases out of ten, where, from any cause, two such swarms mix.

Of course there are many other ways that an after-swarm could have mixed in with them unobserved.

A second cause for such trouble here in the South is what we call "pauper" swarms mixing with our big natural swarms. Bees here in Texas, if left with a big supply of honey the previous fall, will be sure to swarm the next April or May where plenty of pollen is to be had, whether any new honey is in sight or not. At such times we often have these "pauper" swarms hanging around our apiaries. They are usually late after-swarms that were not well supplied with honey, and, becoming discouraged, swarm out about swarming time.

They sometimes come from the woods, but more often from our box-hive neighbors who robbed their bees injudiciously the previous fall. If these starving swarms attempt to unite with *any* normal swarm, no difference what kind of queen either has, they are sure to be stung to death. It is simply impossible to unite these old starving bees with a normal swarm. I have been told, however, they do not have these starving or pauper swarms in the Northern States at swarming time.

Rescue, Texas, Aug. 11.

L. B. SMITH.

Taking every thing into consideration, you support the theory that we offered in the footnote.—ED.]

CAN FINE COMB HONEY BE PRODUCED ONLY IN SHALLOW FRAMES?

On page 544, Sept. 1, Louis Scholl says: "As it is impossible to produce an excellent article of comb honey in any of the deep frames so much in use, our supers are all of the shallow type, with the 5½-inch-depth frames. With these it is possible to use full sheets of very light foundation. Room can be given only as needed, especially on weaker colonies, and the finished product can be removed sooner." Now, we think that a part of this statement is misleading. The vast majority of Texas bee-keepers use the full-depth Hoffman self-spacing frames, and we know for a certainty that just as fine and delicious comb honey can be produced in the full-depth frames as can possibly be produced in the shallow frame. The writer has both kinds of frames in use; and as to the quality of the honey, there is no difference. It would be just as fair to say that better corn can be produced by breaking the soil with a 5½-inch plow, instead of a full-width 9-inch plow; or, with one horse than with two horses, on the supposition that, with the one horse, the corn could be plowed just as needed. After many years of experience, our opinion is that the style of frame does not affect the quality of the honey. The pasturage and the strength of the colony are the features that affect the quality.

Mr. Scholl further says that, when the shallow frames are used, the finished product can be removed sooner. This can not be denied; but we emphatically assert that taking the honey off the hive too soon after completion causes it to be lower in grade or quality than that which has remained on the hive for some time after completion. Honey left on the hive grows thicker and better in flavor as the days go by. All prominent bee-keepers in the United States and in other countries state that, in order to get the best

grade of extracted honey, it must remain some time on the hive. This is also true of comb honey.

Bartlett, Tex.

T. B. ROBINSON,
Pres. Texas Bee-keepers' Asso'n.

BEES MOVED A SHORT DISTANCE WITHOUT LOSS.

I have just had a little experience in moving bees a short distance, that may be of interest.

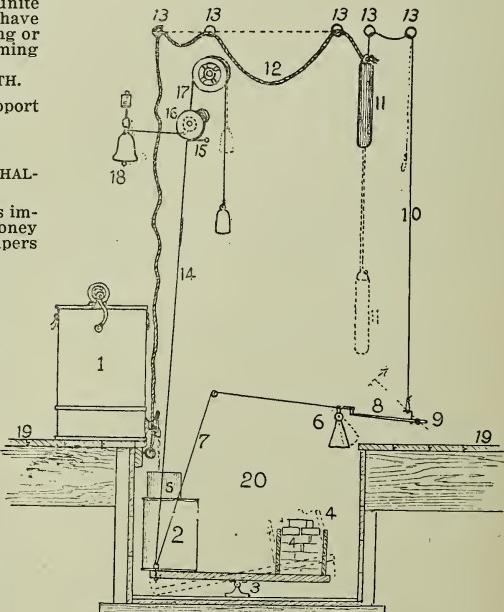
On account of a court decision in regard to the survey, we found it necessary to move our house, bees, etc., about 60 rods. On July 24 we put the bees (12 colonies) down cellar, first tacking wire netting over the entrances, and left them three or four days. In the meantime we moved the house. We put the hives in the same relative position to the house that they were in before. But the surroundings were very different, there being cherry-trees in front and raspberries back of the hives in their former position. I let the bees out at 8:30, smoking them well, and put a board in front of each hive. I saw a few bees flying around the old location, but they were practically all gone by night. So the moving was a perfect success in every way.

A. E. BOONE.
Twin Falls, Idaho, Aug. 7.

A HOME-MADE APPARATUS FOR CLOSING THE HONEY-GATE AND RINGING A BELL WHEN A SIXTY-POUND CAN IS FULL OF HONEY.

The filling of honey-cans always takes time, and there is, besides, the danger of wasting the honey on account of cans running over. I often thought of Mr. Hutchinson's electric bell for giving the alarm when the can is full; but I went further, and devised an apparatus that not only rings the bell but shuts the honey-gate when the can is within one quart of being full. If I made my bearings a little more delicate I think I could fill the can even full every time.

I run the honey direct from the extractor into a strainer made in the form of a funnel that extends directly into the sixty-pound can. I have the extractor



on the floor with the gate over a pit, at the bottom of which is a balance-board with a weight on one end and a honey-can on the other. When the can fills, it overbalances the board and sinks down, thus releasing the trigger that holds the weight. The illustration shows the whole plan very clearly. The whole apparatus costs less than \$1.00 to make.

The weight that rings the bell is wound up around the axle shown at 16. When the axle-trigger is released, the weight runs down into the pit below, ringing

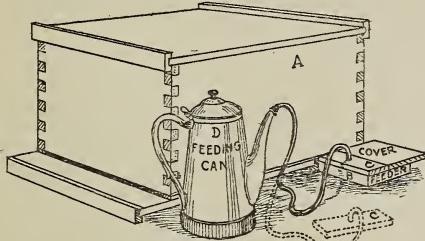
ing the bell. The weight that closes the honey-gate is drawn up and hooked by means of the trigger. When it is released it falls four or five feet with a hard jerk, and closes the gate every time.

Lytle, Texas.

CAREY W. REES.

FILLING ALEXANDER FEEDERS WHEN ROBBERS ARE BAD.

My bees annoyed me by rushing out when I lifted the cover boxes from the Alexander feeders. Furthermore, when no honey was coming in, and robbers were prying around, it made trouble to do much feeding. I made a block, C, as shown in the illustration; bored a hole through it, through which I put one end of a two-foot piece of $\frac{1}{4}$ -inch rubber tubing. I slipped the other end of the tube over the snout of a small tin



teapot, and then my troubles ceased. I put the proper dose in the pot, shut the cover, and set it down by the hive. Then with the feeding-block, C, I slid the feeder-cover aside until the finger holding C touched the side of the feeder; then with one hand I could keep the blocks in place, while with the other I poured in the feed through the tube. No bees are disturbed, and the feeder cover is slid back where it belongs, without any trouble.

Florence, Ala.

H. A. MOODY.

THE BEST PLACE FOR BAITS IS IN THE CENTER OF THE SUPER.

As to the best place in the super to put bait sections, I will say that my practice this season is different from Mr. Townsend's, page 475, Aug. 1. Last year I put the baits in the corners; but the results were not satisfactory. Some were untouched when the rest of the super was finished, and many were left with some of the cells uncapped. The two sections with starters of foundation between the corner baits at each side of the hive would be filled and capped before much if any work was done in the baits. I use top and bottom starters, filling the section nearly full of foundation.

This year I had baits enough so that I put from four to twelve in every super; put on the hives, and the baits were all put in the center of the supers.

My objection to baits in corners or anywhere else is that they divide the working force too much. Bees naturally begin work in the center of the super, and that, I believe, is the best place for baits. When these are filled, and considerably more work is done in the super, I take off the super and remove all the finished sections; then fill up other supers with "back-baits," and give these to strong colonies for completion.

Mr. Doolittle, in his book, "A Year's Work in an Out-apiary," says that he puts twelve baits in the center of each super first put on the hive after shaking.

Leon, Iowa, Aug. 3.

EDWIN BEVINS.

BEES ENTER SUPERS READILY WHEN THE BAITS ARE IN THE CORNERS.

I can endorse the statement made by Mr. H. B. Palmer, page 378, corroborated by Mr. E. D. Townsend, page 475, Aug. 1, as to the results from bait sections placed in the corners of comb-honey supers. In my modest little bee-yard at Florence I have practiced this corner-bait-section scheme this year, and it has met with prompt and generous recognition by the bees. When possible I give a super provided with a row of unfinished bait sections on each side, placing sections with $\frac{3}{8}$ -inch bottom starters and top sheets coming to within $\frac{1}{8}$ inch of the bottom starters in the four middle section-holders. Under these conditions I have not had a single case of sulking, the bees readily entering the supers and pushing forward the work so that the entire super is completed practically at the same time. In cases where I have not been so liberally supplied with these bait sections, however, I have

given supers with two such sections, each placed in diagonally opposite corners, and in other cases with four sections—one in each corner. In every instance my bees have promptly gone above and commenced work. Locality possibly has some bearing on the question. During the heaviest honey-flow my bees have had warm nights, with no chilled super space to discourage them. Lately, however, the nights have been cooler, but I have noticed no difference in the willingness of the bees to accept these outside baited supers.

DEEP SPACE UNDER BOTTOM-BARS.

There is another vexed question—the use of a deep space under bottom-bars as a preventive of swarming. I have used a $\frac{2}{3}$ -inch space under my strongest colonies this summer by placing either blocks at the corners or continuous strips at the sides, in every case leaving a clear opening at the rear of the hive, as described by J. B. Blunk, p. 229, April 15. There has been no building down. We have had nights warm enough, I should think, to encourage comb-building outside if the bees had been inclined to indulge in this vagary. Unless I have a different experience in the future my hives go up, with bottom-racks only as a last resort.

LUCIAN W. MCLEMORE.

Florence, S. C., Aug. 5.

BAITS PREFERRED IN THE CORNERS.

It has always been my practice to put bait sections in the corners of supers instead of in the middle, and I have had the very best results. Possibly the use of double-walled hives may have had something to do in making the practice a success with me.

Evanston, Ill., Aug. 12.

W. M. WHITNEY.

HOW THE LAW IN CANADA TAKES CARE OF THE FRUIT-GROWERS WHO SPRAY THE TREES.

On p. 327, June 1, O. B. Metcalf mentions losing his bees by poison on sprayed trees. In Canada, fruit-growers are compelled by law to flavor their spraying mixtures with crude carbolic acid when spraying trees in bloom.

HONEY INJURED BY BEING MELTED WITH WAX.

On page 399, July 1, on separating melted wax and honey, is there any way by which wax and honey can be melted together without injuring the flavor of the honey? We were taught to drain out what we could, then put the rest of the cappings in a press, and squeeze the rest of the honey out. We lose very little honey that way, and none of the flavor. I should hate to offer my customers honey that has had wax melted with it; but then, I am an old fogey, and got my training with D. A. Jones, of Beeton, in 1883.

Campbellford, Ont., July 20. B. W. HARRINGTON.

[It has been suggested before that honey melted with wax is injured in flavor, especially if the wax is allowed to cool on the honey; but we have never been able to find any discoloration or loss of flavor except when the heat was too high or the outlet obstructed in some way so that the honey could not escape from the heat fast enough. Certain kinds of honey may, of course, be affected more than others. We should be glad to hear from others.]

In relation to the use of carbolic acid in spraying mixtures, the reader is referred to an editorial in this issue.—ED.]

BEE-KEEPING IN TURKEY.

Mr. N. J. Nicolaidis, of Constantinople, Turkey, has asked me to answer several questions relative to his location which I will endeavor to do to the best of my ability.

1. I see no reason why one could not make a success of honey-production in Turkey, especially extracted honey. I hardly think it advisable to produce comb honey in such a location, owing to the short honey-flows interspersed with dark flows.

2. I consider my sectional hive well suited for such a location; however, I doubt if it would be any better in the hands of the average bee-keeper than any of the standard hives.

3. The plan of removing the partly filled sections and having them finished off during a later honey-flow or by feeding back extracted honey is the one I would pursue, and the sectional hive would be better suited for this purpose, owing to its rapid system of expansion and contraction.

4. Perhaps the best time to requeen would be at the close of the basswood flow.

5. Young queens introduced after the basswood flow would undoubtedly keep up brood-rearing during

August, and give a stronger force of workers for the heather bloom; but probably a mild feeding during August would be very profitable. J. E. HAND.
Birmingham, Ohio, Aug. 10.

INTRODUCING VIRGINS BY THE FLOUR METHOD.

I received a batch of six virgins recently by mail, and I had one of them mated in less than an hour after I received them. When they came I went out to the yard to introduce them by the flour method mentioned on page 231, April 15. I took a frame of bees out of the nucleus and set it beside the hive, flouring both sides of the comb. I also floured the bees in the mailing-cage, took off the screen, and let the queen and bees out. I floured them some more as they came out, but the queen flew away as I started to lift the comb. So I put it back, and went to another hive. When I returned to this first hive the queen was back, but she flew again as I lifted the comb, so I put it in the hive and raised the hive one inch where the comb stood. Then I went to two other hives; and when I finally returned to this first hive the queen had the drone organs attached to her, and the bees were running after her and pulling at them. On the second or third day she was laying. W. D. K. DUEL.

Tonawanda, N. Y.

WILL SPLINTS PREVENT COMB-BREAKAGE AS WELL AS WIRES?

Say, Mr. Editor, you and Dr. Miller are getting me all muddled up again. What are wires or splints for, any way? I supposed they were for the purpose of strengthening combs so they would not break out of the frame so easily. I was just on the point of asking if the splints would keep combs from breaking out in the extractor as well as wires when I noticed that you always said "brood-frames." I now see, p. 490, that Dr. Miller is talking of using splints for part sheets. Cincinnatus, N. Y., Aug. 30. E. B. KIBBE.

[The purpose of wood splints is, primarily, to prevent foundation from sagging during the process of drawing out—that is, eliminate elongated or drone-cells. As they can be only partially attached to the frame they can not hold the combs in the frames as well as wires that are threaded through the end or top and bottom bars. For the purpose of extracting, wires are much better than splints, and the latter are much better than horizontal wires for preventing the sag in foundation.—ED.]

WHITE-TOP MILKWEED THE CAUSE OF THE SO-CALLED ALSIKE POISONING.

I have been greatly interested in the discussion on alsike clover and the effect it is supposed by some to have on white-nosed horses. I have never seen a stalk of alsike clover, but have many times noticed stock affected in the way described, from milkweed poisoning. In certain portions of Texas the white-top milkweed comes up so thickly in seasons favorable to its growth as to give pasture lands the appearance of being covered with snow. It is a very tender plant, and when bruised "bleeds" freely a milky-white juice. I have seen white-nosed horses so badly affected by it that the nose was a solid mass of sores, and the eyes were entirely closed. There are other plants which affect them in this way; and if a careful investigation is made, I believe the alsike will be exonerated.

I might add that, in favorable seasons, the bees store great quantities of very beautiful honey from this variety of milkweed; but, unfortunately, it is as strongly flavored as pepper-sauce, and is fit only for baking purposes. J. D. YANCEY.

Bridgewater, Wash.

[If a careful and scientific investigation were made where it is supposed that alsike was responsible for sore noses in horses it would probably be found, as you say, that some weed growing with the alsike was responsible for the trouble.—ED.]

ANOTHER CAUSE FOR SORE-NOSED HORSES; ALSIKE NOT TO BLAME.

I have owned and seen white-nosed horses in Kansas running loose on prairie grass where no alsike could be seen in a day's journey. Such horses, especially the mares and colts, often had their noses covered with scabs and blisters. On the other hand, in this locality, where alsike clover comes up wherever it gets a chance to grow, and where it is scattered through every pasture, new or old, I have 20 horses in a pasture, and there is not a sore-nosed horse among

the lot. The cause of the sores is plain to me. I call it "ergot" poisoning. The ergot is a poisonous fungus existing in several kinds of vegetation and seed. About three years ago I lost 20 chickens, and a neighbor lost 75 before I recalled having read a book published by the United States Department of Agriculture on ergotism and ergot poisoning. I had my suspicions regarding the wheat that we were both feeding. I found that it was ergotized, and then we changed the feed for a few days and then washed the old wheat in cold water before feeding it, and had no further trouble. My neighbor followed the same plan with success. The book that I refer to was published some fifteen or twenty years ago, and it went into detail, showing clear illustrations of the fungus and the diseases caused by it. I consider the book a key to several such troubles on the farm, including sore-nosed horses. Whether this book can be obtained at this late date, I am unable to say.

Lowell, Wash.

WM. BELSHAW.

SURPLUS QUEENS WINTERED IN NUCLEI IN A CELLAR.

I have wintered successfully a number of nuclei in my cellar, and perhaps you will be interested in knowing about it. I use a frame about 6 x 6 for nuclei, four and five frames in each, and two or three nuclei in each hive with division-boards between. Last fall the nuclei were strong, and I had a lot of surplus queens, so I removed the division-boards and doubled up so each nucleus had from 8 to 16 frames, and 10 to 15 lbs. of honey each.

I winter my bees in a cellar under the kitchen. The size of the cellar is 20 x 14, by 9 deep. Four feet from the outside door is a wall of rough boards covered with paper, and in place of a door is an old carpet folded and hung across the doorway. This leaves the inner bee-cellar 16 x 14 x 9. In this I piled up 70 colonies, and on top of the piles I placed the nuclei. All wintered except two, and from all appearances they starved out and went in with others near by, as there were no dead bees in the hives.

Swedona, Ill., April 28.

S. F. TREGO.

ENTIRE COLONY LEAVES HIVE AND BROOD.

We are puzzled over the strange actions of a swarm of bees in our neighborhood. About Aug. 13 a swarm, large in size, that had worked in the super, and that had been in the hive about a year, left the hive. There were about 8 lbs. of honey in the brood-chamber, and six frames of brood. Bees were hatching every day; but on examination we found that no queen-cells had been left. The bees came out about 3 o'clock, and alighted in a tree about ten feet distant. They were put back in the same hive, but did not want to go into it. The next day they came out and left for good, and we have not seen them since. They were in a good clean hive with healthy combs; yet all bees left that could fly. There was no swarming at the time in the neighborhood, as it was so late.

La Porte, Ind., Aug. 31.

V. H. MCKEE.

[A small snake crawling into a hive has been known to drive a normal colony out of its hive. Ants have been known to do the same thing. If any reader has any solution to offer we should be glad to hear from him.—ED.]

GARDEN TANSY FOR STOPPING ROBBING.

For three years I have repeatedly had good success in using garden tansy in stopping robbing. The entrance should be reduced so the workers and guards will have all the space they need, but no more. The tansy is wrung up into small bits and placed plentifully on the alighting-board, a little right up to the entrance. Usually one application is enough. But if it's a bad case, repeat the tansy, green and fresh, and then get away and stay away.

Hollis, N. C., Aug. 17.

C. C. GETTYS.

SELLING HONEY AT A CITY MARKET.

In selling my crop I have always used the city market. I rent a stall among the farmers for my horse and wagon, and there I sell my honey and take orders, both retail and wholesale. At the market I meet persons from every part of the Union during the winter season. I deal only in extracted honey.

Los Angeles, Cal., Aug. 24.

T. ARCHIBALD.

Our honey crop is very poor, and as yet we have taken no honey. In June we had the black honey-dew; but I think my bees have nearly eaten it up again. Basswood here was nothing too. It was so cold during bloom that so far it has not amounted to any thing. I have 140 stands.

Danville, Ill., Aug. 30.

JOHN NYDEGGER.

OUR HOMES

BY A. I. ROOT

Then the Lord rained upon Sodom and upon Gomorrah brimstone and fire from the Lord out of heaven; and he overthrew those cities, and that which grew upon the ground. And Abraham got up early in the morning to the place where he stood before the Lord; and he looked toward Sodom and Gomorrah, and toward all the land of the plain, and beheld, and, lo, the smoke of the country went up as the smoke of a furnace.—GEN. 19: 24, 25, 27, 28.

There has been a little discussion and considerable correspondence in regard to "fire and brimstone" in the world to come; and I think the general conclusion was that none of us, learned or unlearned, know very much about it. I said that I did not believe in "everlasting torture;" but my conscience troubled me afterward, because some might understand by that that I did not believe in future punishment; and I tried to explain that I did believe in some sort of penalty for willful and deliberate sins committed here in this world of ours.

Well, friends, during this bright September morning I want to talk a little about fire and brimstone, or something equally terrible that we meet here in this life. My sister, Mrs. E. J. Gray, who has been a prominent W. C. T. U. woman ever since that organization was started, last Sunday put into my hands a pamphlet issued by the Ohio State Board of Health that startled me. I knew our beautiful State of Ohio had a Board of Health, and I have met and talked with Dr. Probst in regard to the drinking-water of our town of Medina, and also in a general way about the drinking-water of the towns and cities of our whole State. Well, this bulletin, issued by the State Board of Health, has been sent out during this present year of 1909; and right on the front page we read, "By request of the Woman's Christian Temperance Union." May the Lord bless *each* and *every* member of the W. C. T. U. I know they worked for many years against great odds. The great dailies poked fun at them and tried to push them off the sidewalk out of the way (figuratively I mean), and I am sorry to say that some of the Christian people, and perhaps a few ministers, sneered at the W. C. T. U. and the things they were undertaking to do; but, thank God, they are beginning now to be recognized, and are "coming into their own." May God bless them while they remain here on earth. I say this because some of them are now getting to be pretty well along in life; and I am sure he has *great stores* of blessing for them in the world to come. Well, it would seem that one of their last and best efforts has been made to have the State of Ohio issue this new bulletin that I am going to tell you about, and from which I shall make some extracts.

Our text would seem to indicate that the Lord burned up the *people* of Sodom and Gomorrah—all ages and both sexes. We are not told very definitely what particular sins the folks were guilty of; but this event in

history has coined a new word. I have not examined the dictionary to learn the definition of the word Sodomite; but I am quite sure that it means every thing low, disgusting, and repulsive.* One can hardly imagine any thing more hideous if he take pains to inquire into it. I suppose these people had, of course, repeated warnings; but they disdained them, and finally God saw fit to "wipe them off the face of the earth;" and he did it with *fire* and *brimstone*.

Well, now, this tract issued by the State Board of Health causes me somewhat to hesitate in giving you the title; but I believe it is best for men, women, and children to know of God's intense displeasure against those who violate these holy laws. Here is the title of the pamphlet:

THE CAUSE AND PREVENTION OF VENEREAL DISEASES.

I am now going to give you the first paragraph:

There has been a remarkable reduction in most countries in the contagious and infectious diseases. Smallpox, cholera, and yellow fever, which carried off the people by hundreds of thousands, have largely disappeared. Diphtheria, scarlet fever, typhoid fever, and tuberculosis, are coming more and more under control, and bid fair eventually to be practically wiped out. These beneficial results have been largely brought about by health authorities supported by intelligent public opinion.

There are two widely prevalent diseases, both contagious and infectious, that are causing untold human misery and great loss of life, and nothing is being done to prevent them.

Yes, we do rejoice that the whole wide world is making great progress in mastering and banishing diseases that in former ages swept off the people by the hundreds of thousands. We have succeeded so well at the Panama canal that the death-rate is getting to be even less just now in that torrid climate than that of many of our northern cities.

Let us now consider that last sentence in the last quotation. The State of Ohio tells us that these special diseases are widely prevalent; that they are causing untold misery and loss of life. But now comes the stunning statement that at the present time "there is nothing being done to prevent them." I do not find the name of the author of this document; but I hope he is mistaken in saying that *absolutely* "nothing" is being done by the State. I have consulted two of our ablest home physicians in regard to the matter, and their verdict is about the same as the above. This pamphlet, as I take it, is for general distribution; but I can not print the whole of it. My next quotation reads as follows:

These diseases can not be spoken of in polite society; because they are caused by impure sexual relations, and from a sense of modesty, which many think is false modesty, the sexual relations are seldom discussed between parents and children, or even between man and wife. As these things are not taught in school or college, boys and girls grow up—not in ignorance, as many think, but with the most erroneous ideas in regard to the function of generation, and the diseases

* My attention has just been called to the latter part of the first chapter of Romans. This gives us a better picture of the terrible state of affairs existing in Rome in its best days, and of the consequences of letting loose these lower passions, than can be found elsewhere. It is well for us to read it occasionally as a warning.

that may come from the abuse or improper use of this function.

Fortunately society is awakening to the great danger of such ignorance and to the necessity for removing it. In Germany a national association for the prevention of venereal diseases has been formed. Some of the most prominent men and women in Germany are among its members. A similar association has been started in Chicago, numbering many well-known men and women in its membership. Recently the *Ladies' Home Journal* published a plainly worded article on the subject.

This pamphlet is published by the Ohio State Board of Health at the request of the Women's Christian Temperance Union, and is to be personally and properly distributed by members of that organization.

I want to be put down for myself as one of the persons referred to in the above, who think it false modesty to avoid mentioning these matters in the family and the home; and it rejoices my heart to know that Germany (may God bless Germany) is starting a reform. I have not seen the article in the *Ladies' Home Journal*; but I am sure it is good and wise, for I know what tremendous blows that periodical has struck at the patent-medicine business and many other evils. One of the most terrible things connected with these diseases as described above is that, in spite of every thing that the best physicians of our age can do, the disease sometimes hangs on for years, and finally we are told that not only the innocent mothers but the unborn children become affected, and ruined in health for life; and finally we are told that in our asylum for the blind at Columbus (may God be praised that we have such an asylum) nearly a third of the blind children have been made so for life by the thoughtless, heartless sins of the parents or parent, for we men are mostly, if not altogether, to blame for this state of affairs.

Without proper medical treatment, and at times in spite of this, the disease goes on for years and years, and often for life, attacking various parts of the body, and often producing death.

The innocent children of such a parent are often born with the disease, and may suffer from various defects and infirmities on account of it. The innocent mother of such children may also become affected, and be ruined in health, to say nothing of her moral suffering if she becomes aware of the nature and origin of the disease of which she and her children are the victims.

Nearly one-third of the blind children in State institutions have been made blind by this disease, contracted at birth.

Oh that some power could take these guilty men and force them to go to the asylums for the blind, and then let our great doctors, with the help of our ministers with all their ability and oratory, point to these children doomed to a life of darkness, and explain in voices of thunder to these fathers that the curse resting on these children came directly on account of their being so thoughtless as to yield to the lowest passions that curse mankind; by their guilty act, of almost a single moment, these children are made blind for life—helpless, innocent children. In a former Home paper the question was asked what should be done with a man who would deliberately destroy the eyesight of his helpless, innocent babes. Well, this pamphlet of only three pages tells us that we have men who are still doing this very thing, cursing children, their own children, and part of their own flesh and blood, by condemning

them to go through life stone blind. This pamphlet further tells us that the surgical operations that so many women are just now called on to undergo are, many of them, the direct consequence of the acts of heartless husbands along this line.

Among young men the opinion prevails that this disease is a trifling disease, "no worse than a bad cold." This is doubtless one reason why the disease is so prevalent. Men do not understand its dangers. To say nothing of the possibility of infecting others, often loved ones, serious complications frequently arise, and the victim may be ruined for life.

What can be done to prevent these diseases that cause such great calamity to so many families? They drag their slimy length through all society. Kings have not escaped, and no class is wholly exempt. Chastity has been preached for ages, and must still be preached, but not alone by the moralist. The people must be made to know and understand the dangers and often terrible consequences of these social diseases, the outcome of the "social vice."

The attempt has been made by public authorities in Europe, and to a very small extent in this country, to control and limit these diseases by examining and licensing prostitutes. The success, apparently, has not been great, and the idea is obnoxious to most of our people.

From the above we learn that no class is wholly exempt. Even kings have in times past not escaped. Dear friends, I have seen some of the effects of this hideous thing, that can not be put into print. It came about, however, by no fault or sin of my own, thank God, and thanks, too, to my good Christian mother; and I can assure you, too, that it came about from no fault or sins of my ancestors—thank God for that; but I have had a glimpse of the hideous thing notwithstanding. May God be praised for the fact that the people of our land did protest and object, so that this thing of licensing shame never succeeded very long. I can remember hearing it talked about thirty or forty years ago, when the city of St. Louis seemed to be considering the subject seriously. Our stenographer informs me that the scheme has been tried in Paris on a large and scientific scale, for a long period of time, but it is now generally abandoned as utterly impractical; and he adds that no people have examined more carefully these important questions than the French, and that their decision ought to be final.

Here is something that meets my views exactly:

The greatest good will come from publicity and the proper instruction by parents of boys and girls at a suitable age.

Think of it, friends! The above statement comes from the Board of Health of our great State of Ohio. Now come some instructions to sufferers that I heartily commend:

PRECAUTIONS TO BE TAKEN BY ONE WHO IS AFFECTED.

Beware of the advertising quacks who publish their guarantees of cure. Consult your family physician, who will refer you to a specialist if this is necessary.

Do not kiss any one. Do not drink from a cup or glass that may be used by another before being washed. Where possible, separate knives, forks, spoons, towels, etc., should be used. You have sinned, but may be forgiven, but surely no man can forgive himself if he knowingly, or even carelessly, causes serious injury and possibly death to some innocent person, and above all to a loving, trusting wife.

A copy of this circular will be sent to any person upon application to the Ohio State Board of Health, Columbus, Ohio.

I am sorry to say that I knew young men

to be duped by quacks along this line as much as *fifty years ago*. They sent out circulars trying to convince their dupes that they were in great danger; and then they demanded a big sum of money to help them out of their trouble. Had they gone to their family physicians they would have saved their money and been very much better in health besides.

The concluding sentence may frighten some people unnecessarily; but it can not very well be helped, so far as I can see. You have probably noticed that several railroad companies have adopted the plan of furnishing drinking-cups that may be thrown away by the one who takes a drink. I fear this will prove to be a big expense; even if these paper cups do cost only a fraction of a cent. A better way for each traveler is to carry what is called a telescoping cup, which, when not in use, can easily be carried in a vest pocket, but when drawn out holds nearly a tumblerful.

The concluding sentence rejoices my heart, for it indicates that there is certainly one, if not more, good Christian men belonging to the Ohio State Board of Health. May God give each and all wisdom and understanding to look after the children of our State so that those even in our great cities may never suffer fire and brimstone *from God*, in order that the *very ground* where people have lived may be purified. I suppose we are to understand that, when God has tried every thing else and found it a failure, only the purifying effect of "fire and brimstone" may well wipe out the sin.

In closing let me mention an incident that I got from one of our agricultural papers. A man who was fairly well-to-do was throwing cold water on the work of our farmers' institutes and experiment stations. He said to a crowd gathered around him that he was well-to-do, and had money laid up in the bank, and he had never paid any attention to these new-fangled things. He just kept right on farming in the old-fashioned way. As he commenced on virgin soil, he had for many years gotten pretty fair crops; but it was evident to all who knew any thing about his farming that his land could not stand such treatment very much longer. Some one in the crowd said, "Mr. Brown, what provision does your method of farming make for your boys?"

He replied, "I have no boys."

Then somebody ventured, "Are you not a married man?"

I can not remember his reply, but it was something to the effect that he cared as little for womankind as he did for children; that he was not married, and never expected to be. But in order to awaken him to a sense of his responsibility to community, a third questioner asked, "But, Mr. Brown, how about the man who is to come after you?"

Now, friends, I hope that, under the circumstances, you will forgive me for giving his reply in full, for there is a moral to it. His reply was not given under "inspiration," but it is nevertheless "valuable for instruc-

tion and reproof." It was, so far as I can remember, as follows:

"To hell with the man who comes after me. That is no concern of mine."

At this reply his audience dispersed; and if there were a few young men in that crowd I do not think there was one of them who wanted to take his advice about farming. Now, this man's state of heart, his attitude toward God and his fellow-men, exhibit exactly the state of mind that a man must be in when he deliberately *curses* the children that are to come after him. Such a man deliberately and without hesitation says, "Let the children go to the asylum for idiots, or the blind or crippled. I do not care." Come to consider the matter, I can hardly conceive of a human being so depraved and lost as to take that attitude; and, my friends, I am inclined to believe that seldom, if ever, a man does express himself thus unless he is under the influence of strong drink. Now we are coming around to the work of the Anti-saloon League once more. When the saloons are cut off, and *drink* is kept away, our asylums for the blind, idiotic, and insane—yes, and our *penitentiaries* too—can be cut down instead of being made larger. We are told that the State of Ohio is now under the absolute necessity of building a larger penitentiary. They decided once to fix up the old one—put on some wings, etc.; but it is right in the midst of the city of Columbus, and the conditions are so unsanitary that the workmen have come to a standstill, and the proper authorities demand a new penitentiary throughout, on a new site some twelve miles from Columbus. The site of the old one would sell for enough to erect the new penitentiary. And just now the great dailies—please notice it is the ones who are carrying *whole columns of whisky advertisements*—are bewailing the fact that the State of Ohio is approaching bankruptcy. The minute my eye caught on the headlines, I knew what it meant. It was insinuated that, unless we had the revenue from the *saloon business* that we used to have, we could never pay our debts, to say nothing of building bigger penitentiaries, etc. It is no use to tell them to hold on a little, for they know already that this great revenue will *not be* needed when things adjust themselves. I am heartily in favor of a new and better penitentiary; but by the time it is built our people will find that a smaller one will take care of the criminals, especially if we get to work speedily and declare with one accord that "*Ohio shall be dry*." When this is done, the great Father above will wait a long while before he decides that it will be necessary to resort to the purifying effects of fire and brimstone to make our Ohio cities sweet and clean, and free from graft and corruption.

TWO AND A HALF TO ONE FOR TEMPERANCE—GOOD FOR IDAHO.

Canyon Co., the first to hold an election for local option, goes dry by a majority of $2\frac{1}{2}$ to 1. Let us sing the doxology.

Caldwell, Idaho, Aug. 26.

F. M. ROSEMAN.

POULTRY DEPARTMENT

BY A. I. ROOT.

THE INCUBATOR OR THE SITTING HEN—WHICH?

Before discussing this subject at length, permit me to say that I have been having excellent success in working with sitting hens and the incubator together. The incubator I am using now, as I have explained, has 16 shelves, and 8 eggs on a shelf. It is virtually 16 little incubators combined in one. I often put in 16 eggs a day as fast as they are laid; then when one of my White Leghorns offers to sit I give her 16 eggs from the incubator, nearly ready to hatch. So far this thing seems to work nicely. If she commences sitting one afternoon, and her chickens commence hatching next day, she does not seem to be at all put out about it. She makes just as good a mother as if she sat on the eggs three weeks. When her chicks are weaned, or before, she begins to cackle and sing, and lay eggs. She is much happier than she would have been if thwarted in carrying out nature's program. If I can get around to it I am going to trap-nest one of these hens, and try in this way to see how many eggs she will lay in a year *besides* taking the place of a brooder. Now for my story:

Some time in June a White Leghorn wanted to sit. I changed her to a big drygoods-box with a little yard to it, and gave her 14 eggs; but she just cackled and flew around inside of the box, got out in the yard, got mud all over her feet from our clay soil, and then tramped over her 14 eggs until they were about the worst-looking lot of eggs I ever saw. She sat a little while and then got entirely over it—stayed out in the door-yard all day long. Of course I let her out and gave it up. Two or three days later I found another hen on the nest, that bristled up when I went to take her off. I put her in the deserted box, deciding to wash off the eggs if she consented to sit. Well, she acted like the other hen for a couple of days. Then she finally got down to business and never got off the nest unless I went near and frightened her. You know the poultry journals and books say we must wash off eggs that get soiled while the hen is sitting; but somehow this hen was neglected, and I feared she would not hatch a chicken.* You see the first hen sat on the eggs more or less for two or three days. Then they were left for a couple of days more, may be three days, perfectly cold. I had learned by experience,

however, that this might not do any harm. Now, after this last hen got down to business she hardly left her nest at all. Once or twice I found her off very early in the morning taking corn and water I placed there for her. I do not know how much she stirred the eggs around, but they had very little airing or cooling. I remember telling Mrs. Root later on that the hen had *one* chicken anyhow. But biddy was so wild I just let her have her own way. After the chickens were 48 hours or more old I opened the door and let her out, when, lo and behold! she had 13 chickens from the 14 eggs, and they were so lively that the whole crew scampered off to the stables almost before I could count them. I was in a hurry at the time, and so I let her go; but after that she kept out of sight so much that I could not find her or her chickens a good deal of the time. Now, here is the point of my story:

Those 13 chickens were all exactly alike the day they were hatched. There was not a weak or puny one. They are now half-grown and weaned, and each one is just like all the others. There is not a puny one among them, nor one that lags behind when they start out mornings down through the lumber-piles. If I had an incubator and broodr that would raise 'chicks like these 13 every time, I would not take a thousand dollars for it. Perhaps several things contributed to make this the best hatch of the season.

In the first place, I have two good males. One stays in the main yard, and the other stays al'l the time in the yard where the laying hens go after they have gone through that trap gate. This brood of 13 was started just after I got that trap gate to working nicely. I think 13 out of every 14 eggs are about all fertile. The hen did not sit on the ground; but she was in a box with some straw in the bottom, raised perhaps six inches from the ground. While she was sitting we had rainy weather. Now for the incubator side.

At the time this hen raised the 13 I gave three or four other sitting hens chicks or eggs from the incubator. I told you I gave one hen 29 chicks; but in spite of every thing I could do with her or for her, the chicks got "pasted up behind," and these would always be lagging behind the rest when their mother put out through the wet grass after a rain. A neighbor of mine in Florida declared this "pasting" I have mentioned is caused by the chicken getting chilled in some way or other. He said he had noticed it a good many years, and he knew he was right about it. Well, the two hens that had about thirty chickens apiece were very likely unable to brood properly all the chicks during our cold rainy spells, especially to warm them up when they got wet and draggled. The hen with only 13 covers them very well. Besides, she kept around in the barn and stables, and did not take her 13 out in the wet grass as much as the others. Some of you will say the incubator chicks are not as hardy as the hen-hatched ones. But

*Please do not understand me from the above that you need not go to the trouble of washing the eggs when they get broken. The glutinous matter from a broken egg, unless washed off very soon, will spoil the egg for hatching, sure. But soiled eggs from a chicken's muddy feet are a different thing. In fact, I have just learned from one of the poultry journals that the Chinese preserve eggs for many months by simply daubing them with mud, or making each egg the center of a mud ball. The dry mud excludes air, and keeps the egg perfectly fresh for months, or at least that is what the writer says.

I had bad luck with hen-hatched chicks just about the same time; and for quite a spell I found a dead chick every morning. I do not wonder that people want to quit the business when things go that way. I did not try any brooder during that rainy time, either a lamp brooder or a fireless. But I have some more chickens coming from that incubator (including the Buttercups) and I think I shall try the fireless brooder and a brooder with a lamp, side by side. If we have a cold rainy time I think a brooder with heat will be ahead—at least for the first week or two. While I think of it I feel pretty sure a hen with chickens will do better if allowed to run in a good-sized barn, and in stables, to scratch over the horse manure, etc., than in almost any other place you can put her. T. B. Terry says he would not have hens and chickens around in his tool-house and stables under any consideration, and I do not blame him; but just one hen and thirteen chickens in a large barn and tool-house are not very much in the way.

SORTING OUT THE LAYING HENS.

It is now September 10; and instead of finding one or more dead chickens every morning I have not found a dead one for the last week or ten days. I presume it is mainly because they have become old enough to take care of themselves. But what I want to speak of now is to call attention to that chicken-escape described on p. 483, Aug. 1. A neighbor of ours came over the other afternoon when I was gathering my eggs. I called his attention to the fact that my thirty adult layers had given me 19 eggs. I said, "If you count the hens in that yard you will find there are just 19; and they are the 19 that laid these eggs." He was very much interested at once, and finally said something as follows: "Now, Mr. Root, I want some hens that are laying eggs. I am willing to pay a good price for them if I can be sure of getting some that are laying at this time of the year. I know it is right in the midst of moulting; but my idea is that a hen that is laying just now will be pretty sure to be a good layer. What will you take for half a dozen out of the 19 that have all laid an egg to-day?"

I told him I should not want to sell those laying hens now for less than a dollar apiece. Then he instantly pulled out \$7.00, and in the evening came and got his seven laying hens. I warned him that carrying them to a new location would probably interrupt the laying more or less. But he got four eggs the very next day; and as the result of selling the seven I had only a dozen eggs, instead of nineteen, the very next day.

Now, as I expect to sell out my poultry before going to Florida it will be an interesting matter to see what I have got left, providing I keep selling off the hen "that lays the egg." Of course, I shall do my best to get the remaining ones started to laying so I can get a better price for them.

Later, Sept. 21.—Perhaps I should explain that the above was put in type for Sept. 15,

but was crowded out. I am glad to tell you that I succeeded in getting 8 nice chickens from the 15 Buttercup eggs. The reason I did not get more was first, because three of the 15 eggs were unfertilized. As we had no sitting hen at the time, they were put into the incubator the first week. Then they were given to a broody hen that stuck to her job fairly well for another week, and then she threw it up. A third hen was installed, and she brought out the 8 chicks on the 22d day. Of course I shall not say much about them just now except that they are about the prettiest little fluffy speckled biddies that my eyes ever rested on. The editor of the *Rural* suggests that they are probably a choice strain of Hamburgs, and so of course they would be handsome. And, by the way, their claim that the grain needed for a dozen Leghorns would keep 25 Buttercups is probably because they will go all over the farm—that is, where they have opportunity—and pretty nearly forage for a living. I had some Hamburgs years ago, and I think I gave them up because they went not only everywhere but into almost every thing. So much for the Buttercups.

Since the above was written I have tried hard to see if I could not rear some incubator chickens just as strong and healthy as those that the hen hatched out of the muddy eggs, and I have succeeded fairly. First, I took great care to see that the chicks were never chilled in the least. They were kept 24 hours in a little nursery in the upper part of the incubator, where they had incubator heat, but so arranged that they could have their little heads out in the cool air whenever they desired, just as a newly hatched chick pushes its head out from under its mother's feathers. When 24 hours old they were put into a Root incubator where they had "contact heat" and *fresh air* without stint. See description of the Root brooder on page 207, March 1, 1908.

Another thing, I have decided to feed them for the first two or three weeks nothing but baby-chick food, such as we buy on the market. They are now almost two weeks old, and I never saw any healthier or cleaner chickens—no "pasting-up behind" nor any thing of that sort. They are perfectly clean, and downy all over. The reason why I gave them no other food than the chick feed was because I have been told that chicks are much healthier without soft food of any sort when they are very young—not even bread and milk. Now, I do not know positively, that bread and milk caused the "paste-up," with my former lot of chickens, but I do know that these have not had any of this where they have only the *dry* chick food.

Now, here is another thing that I do not understand. Pretty much all the books and all the poultry-journals talk about feeding baby chicks four or five times a day. With my many cares I could not stand any such fuss; so I just place the baby-chick food and clean water where they can get it after they are 24 hours old, and let them help themselves from that time on. As soon as they

are three or four days old I let them run out on the grassy lawn, confining them only when it rains or when there is a very heavy dew, and, of course, keeping a warm brooder for them until they are a week or ten days old. The fireless brooder is certainly all right when they get old enough to keep warm without the aid of artificial heat or heat from a mother hen.

I am feeling very happy just now to think I have got so near perfect success in raising chickens. The only obstacle in the way of my present success is in getting the chickens in the incubator safely past the "dead-in-the-shell" trouble. The incubator starts them all right, and carries them, apparently, to maturity all right; but a great many die in the shell a few days before they should hatch. Breaking open the shell, as Philo suggests, is of very little use. They usually die any way unless they can break the shell of their own accord. Keeping the eggs in the incubator until the last week, and then giving them to hens to finish, obviates a great part of the trouble. You may suggest that my incubator is not up to date; but so far as I can learn there is always more or less of this trouble, this "dead-in-the-shell," with every incubator on the market—perhaps not as much with some as with others; and there is some trouble with sitting hens also along in the summer and fall. But the hens are certainly ahead of any incubator yet made, in this one respect. If I am mistaken I shall be very glad to be corrected; but I believe that the best authorities agree with me.

Of course, there are plenty of incubators advertised to hatch 75, 80, and even 90 to 95 per cent of the fertile eggs; but as nearly as I can get at it the general average is not over one chicken from two eggs. Let me quote again from the unbiased authority of a government official. The following is from that most excellent up-to-date book that we quoted from before, "The Dollar Hen." (See advertisement on cover.)

May I give the results of a series of full-season hatcheries for 1908, each involving several thousand eggs?

First, a State experiment station, the name of which I do not care to publish. Incubators kept in a cement basement which has flies in which fires were built to secure "ample ventilation." This caused a strong draft of cold dry air, making the worst possible condition for incubation. The hatch for the season averaged 25 per cent, and was explained by lack of vitality in the stock.

Second, the Ontario Agricultural College. A room above ground, moisture used in most machines, and various other efforts being made to improve the hatcheries by a staff of half a dozen scientists. Results: Hatch 48 per cent. The incubator manufacturers call the experimenters names, and say they are ignorant and prejudiced.

Third, Cornell University. Dry ventilated basement representing typical conditions of common incubator practice of the country. Results: Hatch 52 per cent—results when given out commonly based on fertile eggs, and every one generally pleased.

Fourth, one of the most successful poultrymen in New York State, who has, without knowing why, hit upon the plan of using a no-moisture type of incubator in a basement which is heated with steam-pipes, which maintains temperature at 70 degrees, and has a cement floor which is kept covered with water. Results: Hatch 59 per cent.

As a fifth in such a series I might mention again the Egyptian machine with the uniform vapor pressure of the climate, and the three chicks exchanged for four eggs.

While an official in the United States Department of Agriculture I gathered data from original records of private plants, covering the incubation of several hundred thousand eggs. Such information was furnished me in confidence as a public official; and as a private citizen I have no right to publish that which would mean financial profit or loss to those concerned.

Of records where there were ten thousand or more eggs involved, the lowest I found was 44 per cent; and the highest—that mentioned as the fourth case above—or 59 per cent. The great majority of these records hung very closely around the 50-per-cent mark.

A "POULTRY SECRET" SAID TO BE 1000 YEARS OLD.

I notice in the last two numbers of GLEANINGS you tell how to test eggs that have been incubated for 18 or 20 days to find if they contain live chicks. I wish to remind you of the method the Chinese are supposed to have used a thousand years ago, and I believe it is the surest and simplest way of all. Remove the eggs from the incubator; and after they have been out 15 to 30 minutes, according to the temperature of the air, pick up each egg, being careful not to turn it over, and place the top side to the lid of your closed eye. If it contains a live chick it will feel warm, almost hot; but if the germ is dead it will feel cool. After a little practice you will be able to pick the strong, weak, or dead germs very rapidly and accurately.

Naco, Ariz., Aug. 6.

A. J. SWAN.

A SUCCESSFUL HEN'S NEST MADE OF ROCK AND NOTHING ELSE.

Mr. Root:—I can not tell how much I enjoy your writings in GLEANINGS, especially the Home and poultry departments. The way you show up the so-called secrets is refreshing. I have been caught several times myself. I must tell you of an experience a friend of mine had with a sitting hen, which seems to me to destroy the arguments on the moisture theory. The said hen was lost for some time. A diligent search was made from time to time until one day she was discovered under the house. My friend crawled under with considerable difficulty, and discovered that she had laid 14 eggs on a large flat rock which happened to be just hollowing enough so that the eggs did not roll off, and there she sat without a particle of anything to make the nest of, and she hatched out 12 chicks—all good healthy birds. What do you think of that?

Nantucket, Mass., Sept. 6.

M. F. FREEBORN.

I think, friend Freeborn, that the above indicates that there is something nobody understands even yet about the mystery of the sitting hen's ability to hatch eggs under adverse circumstances. In this case the eggs were certainly warm on one side and cold on the other, or comparatively cold, unless the hen gave off sufficient animal heat to warm up that cold stone and keep it warm. As 12 chickens from 14 eggs is a pretty fair hatch, may be we had better have some stoneware hens' nests. By the way, there is a man advertising a nest made of concrete. When you want to banish the vermin, just build a fire inside of the nest with some straw and heat it up hot. This will surely make it sweet and clean. The inventor says the nest is not at all expensive if you get his directions and make them on your own premises.

"THE PROUD HEN IN ALABAMA."

Recently I read in our bee-journal (yours to write, ours to read), about giving incubator chicks to a broody hen. My superior officer had some coming from hundreds of miles away; hatched August 24, received here 26th, 8 P.M. "Broody hen" was in a new nest on two artificial eggs; a netted runway, 10 x 6, well sanded, for a front lawn. She accepted each of the 24 Rose Comb White Wyandottes with a gentle cr-r-r-r, and strutted off with them next morning into her new park, the proudest hen in Alabama. The 24 chicks seem to recognize their filial duty in return for her unremitting care. Thanks for the idea. It's great.

Florence, Ala., Aug. 29.

H. A. MOODY.

HIGH-PRESSURE GARDENING

By A. I. Root

SWEET CLOVER ON THE HILLS OF SOUTHERN OHIO.

It is amazing when we see how some people and even some localities still insist that sweet clover is a noxious weed—as if any clover of any kind could ever be considered “noxious.” We clip the following from the *National Stockman and Farmer*:

SWEET-CLOVER EXPERIENCE.

In June, 1908, we mixed our alfalfa seed by adding equal parts in volume of sweet clover, supposedly of the yellow-flowering variety, but really the white. This mixture was sown on a well-prepared site, and in due time gave promise of a good stand. In October, 1908, it was very difficult to find a single stalk of the sweet clover, and it seemed to be a weakling. Early in April, 1909, on examination I found quite a good many stalks on the low land bordering a small run. These stalks then were several inches higher than the alfalfa. By May 1 the sweet clover was a foot higher, and had thrown out a great many tillers, or laterals, and looked as if it would smother out the alfalfa. The first week in June the alfalfa was ready to be harvested; but weather conditions, both overhead and underfoot, were so bad that I was unable to cut the mixture until most of the alfalfa leaves had fallen, and the sweet clover was in bloom. At this time the alfalfa ranged from two to three feet in height, and the sweet clover five to nine. We finally did get it mowed and put in the barn. Now as to effects: Where the sweet clover was thick it had smothered out the alfalfa, crab grass, wild onion, and last, but not least, the sorrel. With all the rains, not a stalk of any of these weeds in sweet clover or alfalfa is to be seen at the present writing. The remainder of the plat has a good stand of alfalfa, with a few of all the above-mentioned weeds save wild onion.

Where caustic lime was applied (experimentally), and the alfalfa killed, the sweet clover was very rank, thus indicating that it will stand much heavier applications than alfalfa. In the latter part of March, 1909, we purchased two bushels of seed of the yellow-blooming variety, which is two weeks earlier in maturing; has more foliage, and not so bitter as the white, but not so strong a grower. This, with a bushel of the really white, was sown on four acres of wheat at two different periods, March 6 and April 6. At that time a mixture of equal parts of alsike and mammoth clover was sown in addition on the sites of the corn-shocks. At harvest time I did not see twenty stalks of sweet clover, and that was confined to two or three shock-sites; but the alsike, etc., had made a wonderful growth. Aug. 9 the wheat stubble was clipped. The clovers were thick and high; but I saw no more sweet than when the wheat was cut. My brother sowed four bushels of sweet clover in April on a well-prepared site, and reports a good stand. In Bracken and other Ohio River counties in Kentucky the yellow-blooming variety is sown on the limestone hills for pasture and a cover crop with splendid results. As a soil-builder, for plowing under, and smothering out weeds, it certainly has a very great value in many places; but we will sow no more with alfalfa nor with a nurse crop, but on a well-prepared site on tired land. As to its value for hay and pasture, we will write later from actual experience.

Clermont Co., O.

L. ROUDEBUSH.

In another place attention has been called to the fact that the tomato was once thought to be unfit to eat; and now there is hardly any one vegetable that has called forth such a great industry, for the tomato is found canned on the shelves of all our groceries all over the world, winter and summer. When the value of sweet clover for all kinds of stock is known, and when it is known that it is, perhaps, the best clover grown for improving poor soil, it may develop into

something as valuable for farmers as the tomato has proved to be for cooking and food.

YELLOW SWEET CLOVER IN KANSAS FROM SOWINGS MADE IN THE SPRING AND FALL.

I will give you a little of my experience with yellow sweet clover. After reading that man's article from Western Iowa (Mr. Coverdale), I thought I would sow some for pasture as well as for bees. I got three pecks from a neighbor for \$3.50, and sowed part in August, 1908, in an eaten-out place of my alfalfa pasture. I disked it in with the disk, and leveled it down with the harrow. It came up and was in bloom in May, and did finely. In the middle of the day it was covered with bees, and made fine pasture for my horses and milch cows. I tried some this spring sown with rye. It came up, and I have a fine stand; but it has not bloomed yet, but will soon, so I can have two crops of bloom from it by sowing one in spring and one in the fall. I have 35 stands of bees, and they are making lots of honey.

JOHN W. WILSON.

Concordia, Kan., July 27.

WONDERBERRIES AND GARDEN HUCKLEBERRIES.

Mr. A. I. Root:—We have grown some of the wonder plants, and fruited them in the greenhouse. We ate the berries for sauce, and they were as good as huckleberries, and looked just like them. Last week we had some of the large berries that Stenog had, in a pie, and it was the *nicest* berry pie I ever tasted. I ate one berry raw, and it was quite acrid. You gave me a kudzu “vine,” and I was surprised, as you were, at the way it matured, and the berries looked to me just like the deadly nightshade berries I saw when a child. So I took good care of them. What a joke on me! I am writing this to send you this clipping, which you may not have noticed. It is from the *Cleveland Press*, and I enjoyed it so much I will pass it on to you. I hope we may have more of the berries.

Medina, O., Sept. 18.

LU A. WASHBURN.

The above is from a lady who was, years ago, a clerk in our office. Below is the extract referred to from the *Cleveland Press*;

HAVING FUN WITH BURBANK.

We have been so in the habit of bowing at the shrine of Luther Burbank, the nature wonder-worker, that we are just a little tickled to see the tempest in a teapot which rages about his new fruit, the sunberry—or, as the man who bought the rights calls it, the “wonderberry.”

Burbank, “all on a summer’s day,” took a couple of wild plants belonging to the potato family, one of them a native of West Africa, and one of Western America, both of which bore unedible berries, and crossed them. At least that’s what he thought he did, and so said. The result was an entirely new plant, breeding true from the seed, and bearing a berry which Mr. Burbank himself pronounces “delicious, wholesome, and healthful,” in the greatest profusion. He turned the plant over to a commercial horticulturist—for a consideration, it is presumed—and the grantee proceeded to advertise and sell it from Dan to Beersheba, and up to the hilt.

It seems as if every farmer in the United States is from Missouri. They began calling attention to the fact that the wonderberry wasn’t up to catalog description. A farm paper of national reputation made the assertion that this “wonder” was nothing more nor less than the ordinary black nightshade. Burbank hung up \$10,000 for any one who will prove that statement. The able editor claims that he has proved it.

But, after all, why mourn? May be, as Burbank says, the berry is “delicious, wholesome, and healthful”—even if it is nightshade. The tomato is a solanum, too, and used to be thought poisonous. Our foremothers grew it in their flower-beds, and called it the “love-apple”—which shows the opinion they pretended to have of love—but that’s another story. The point is that the tomato was found to be edible, then the world went crazy about it, and now it is a staple and most delicious food. Thousands of people make millions of dollars growing this once-despised solanum.

Now the black nightshade, which people declare is identical with Burbank’s “wonderberry,” is not the “deadly nightshade,” or belladonna, though most people think it is, and shun its berries accordingly. The

fact is, there have always been people who made mighty good pies of the nightshade berries of the *Solanum nigrum*. Once a hired man ate heartily of one of these pies before being told by the farmer's wife that he had been absorbing the fruit of the dreaded nightshade. Turning pale, he took stock of his sensations, remembered how good the pie was, regained color, and pleaded: "Pison me agin tomorrow!"

Who knows but Nature, being unable to make good with the nightshade under its old disreputable name, switched envelopes on Burbank, and handed him the *Solanum nigrum* in the hope of having it follow its cousin, the tomato, into popularity? Who knows that nightshade pie may not thus find its way to every counter?

But Burbank will not enjoy these queries. For one reason, he has a purse of \$10,000 hung up which says that the wonderberry is not nightshade, and the farmers are hoeing the hybrids up for fear they may become a pest! Is it not to laugh?

I can well remember when it was first discovered that the tomato, or "love apple," was really suitable and safe for pies; and all along the years since that time I have watched the development and growth of tomato-growing and tomato-canning. In fact, we publish a book on tomatoes; and it almost seems as if at the present time there was no other fruit or vegetable that is canned in such tremendous quantities as the tomato. It has occurred to me, also, that the garden huckleberries are something that *may* be developed in time into something like the tomato industry.

THE GARDEN HUCKLEBERRY—WHERE IT CAME FROM.

The following, from Mary E. Martin, interests us just now, especially as I first saw the garden huckleberry in her catalog:

I have looked over my catalogs, and find the garden huckleberry was cataloged in 1905 for the first time. The seed was bought from Mr. A. Wilder, Randalia, Iowa, in 1905, although he was writing us about it as early as 1903, as I see by his letter. I am glad to see you have put the garden huckleberry ahead of the wonderberry. It ought to sell well next season.

Floral Park, N. Y., Sept. 21. MARY E. MARTIN.

It just now occurs to me that the garden huckleberry, when thoroughly ripe, is rather too sweet for most people; and I see from a clipping sent me that a lady writer suggests the addition of vinegar as we do with elderberries to give the pie a little more tart. And this reminds me that Mrs. Root made her huckleberry pie with about half sour apples. I did not know about it, and did not notice the sour apple; but I did pronounce it a most excellent pie. The plant I mentioned as growing in the greenhouse among the tomatoes was given more room, good cultivation, plenty of water, and now it is making enormous growth, sending out an abundance of flowers and green fruit; in fact, I do not know that I ever saw a plant grow much faster. During the summer time it was greatly injured by the flea beetle we have spoken about; but at this date, Sept. 24, the flea beetle seems to be gone, and the plant is just showing us how it can grow. If we can keep the flea beetle off the leaves I pronounce the plant a great acquisition; and as Miss Mary E. Martin, who writes the above letter, seems to have been the introducer, I suggest that we all buy our seed of *her*; and there are certainly no larger and finer berries than those produced from the seed she

furnishes; in fact, it is far ahead in every respect of all the "wonderberries" that have been sent us as samples.

HEALTH NOTES

LEMONS FOR CONSTIPATION, ETC.

I am sure the following will be read with interest, coming from our good friend Murray, the man who furnishes many of the pictures for GLEANINGS:

Mr. A. I. Root.—You, as well as myself, have made some investigations as to the merits of the lemon. Here is a new use for those who are inclined to constipation or sluggish movement of the bowels and digestive tract. The lemon use in this case, as in the others, must be taken without sugar—simply in water.

Before going to bed at night take the juice of one lemon in a half or a full glass of water, as you may prefer. In the morning, half an hour before breakfast, take a little more than half a teaspoonful of common salt in water. It is a gentle and efficient laxative, and the desire to "take a walk" comes naturally. If not effective the first time, it will work the second.

This is from Dr. R. H. Wilder, in the Arcade, one of our best osteopaths, and formerly an "M. D." of regular practice.

Sometimes, if one is in the practice of using the lemon as prescribed, the salt may be omitted if a good full drink of cool water is taken in the morning. Try it as you may have occasion, and note results.

Cleveland, O. R. V. MURRAY.

I formerly used a great many lemons in the way friend Murray describes—just lemons and water, with no sugar. For some time back, however, I have been making ripe apples take the place of lemons. They are usually less trouble, and I think they are pleasanter to take. It does not make much difference what the apples cost, even if they are a dollar a peck. I told Mrs. Root I thought I was excusable, even if I am a little extravagant on apples, as they are my sole medicine; and I still think that, for myself at least, they are the "best medicine in the world." I am now so much in the habit of having three or four good-sized apples, or more if they are smaller, every evening while I look over my papers, that Dame Nature seems to consider it a matter of course; and if I do not have my apples I feel lost; and, worse still, if the apples are omitted, the desire to "take a walk in the morning," as friend Murray expresses it, goes by, and then my digestive apparatus gets out of joint. I have tried almost every other kind of fruit when I did not seem able to get the coveted apples; but so far I have found nothing else that answers as well. A good drink of water soon after getting up, either with salt or without it, is an excellent thing, as friend Murray directs; and when you once make it one of your regular habits you are not likely to forget.

KEEPING HONEY FROM GRANULATION—SEE PAGE 496, AUG. 1.

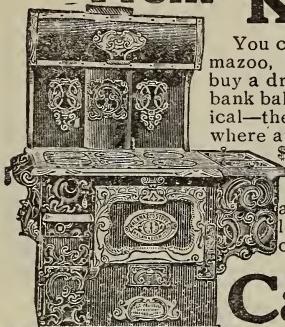
We take pleasure in submitting the following report from friend E. B. Rood:

My heaters for bottled honey are one of the best things I ever got hold of. It is keeping all of my honey clear, increasing my sales, and giving excellent satisfaction.

E. B. ROOD.

Bradentown, Fla., Sept. 13.

Here's Something New From Kalamazoo



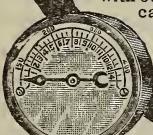
You can save enough real money in getting a Kalamazoo, to buy most of your fuel—pay your taxes, buy a dress or suit of clothes or materially increase your bank balance. You get the best made—the most economical—the most satisfactory stove or range to be had anywhere at any price. With an actual cash saving of from \$5 to \$40 on your purchase. Hundreds of thousands of satisfied users have told us this is true.

We make it easy for any responsible person to own a Kalamazoo. We are the *manufacturers*. You get lowest factory prices, 360-days' approval test, and our convenient terms. Take your choice—

Cash or Credit

Write for Catalog No. 416 and special terms. It gives you all the necessary information about buying and using a good stove or range. Compare our prices and quality with others, prove for yourself what you save in buying a Kalamazoo for cash or on time. *Freight prepaid. Safe delivery guaranteed.*

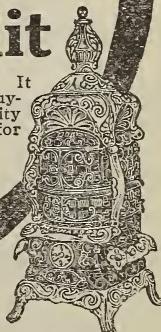
Kalamazoo Stove Co., Mfrs.
Kalamazoo, Mich.



This Oven Thermometer saves fuel and makes baking easy.

**"A Kalamazoo
Direct to You"**

TRADE MARK REGISTERED



Will Your Apple Crop Pay? And Your Honey?

The farmer from the Bitter Root Valley, of Montana, laughs at the question. He is gathering his usual fat, purse-filling yields.

But men from otherwheres scowl.

ARE YOU A SCOWLER?

When you buy *your* CHARLOS HEIGHTS ORCHARD in the Bitter Root, you won't scowl; you won't pay for raw land nor crop failures, nor the privilege to buy water and build irrigation ditches. You will pay for five-year-old, bearing, State-inspected trees; perpetual water, and bumb'r crops.

Just write "Charles Heights" and your address on a postal; mail it to us. We will tell you how to live well by Bees and trees amid delightful surroundings—tell of pleased buyers—of our "Show-you" trips to the Valley.

DON'T WAIT—People we've shown are choosing fast. . . .

Charles Orchards Sell Themselves . . .

Write TODAY!

The O. W. Kerr Co.

300 Nicollet Avenue
Minneapolis, Minn.

131 LaSalle Street
Chicago, Illinois

BANKING BY MAIL

4%

Money deposited with us is secure, and works for you continually. Our perfect system of banking BY MAIL brings this opportunity to your door.

The Savings Deposit Bank has a capital and surplus of \$70,000, and assets of over \$800,000. Its policy is conservative; its affairs are ably managed by capable and successful business men.

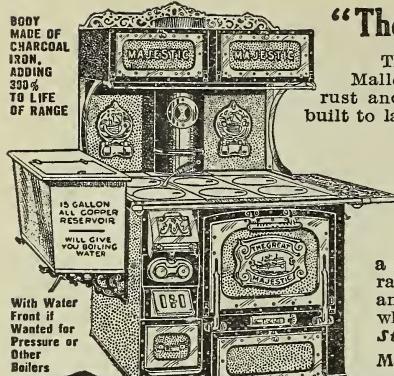
Deposits of \$1.00 and upward accepted, on which we pay a yearly interest of 4 PER CENT. compounded semi-annually. Send currency in registered letter, your own check, or by post-office or express money-order.

Write for the
Booklet Today

Resources
\$800,000

Established
1892

**THE SAVINGS DEPOSIT
BANK COMPANY**
MEDINA, OHIO



"The Range with a Reputation"

They're built on honor of the best materials, Malleable and Charcoal Iron. They won't rust and you can't break them because they're built to last.

The Great and Grand **MAJESTIC** Malleable and Charcoal Iron **RANGE**

a perfect baker with little fuel. The best range money can buy. Made in all sizes and styles and sold by dealers everywhere. Write for free booklet: "The Story of Majestic Glory".

Majestic Mfg. Co., Dept. 13 St. Louis, Mo.

\$50 TO \$300 SAVED

We are manufacturers, not merchants. Save dealers, jobbers and catalog house profit. I'll save you from \$50 to \$300 on my High Grade Standard Gasoline Engines from 2 to 22-H.-P.—Price direct to you lower than dealers or jobbers have to pay for similar engines in carload lots for spot cash.

GALLOWAY

Price and quality speak for themselves and you are to be the sole judge. Sell your poorest horse and buy a

5-H.-P. only \$119.50



Wm. Galloway, Pres.

Wm. Galloway Co.
1635 Galloway Station
Waterloo, Iowa

15 Cents a Rod



For a 22-inch Hog Fence; 16¢ for 26-inch; 18¢ for 31-inch; 22 1/2¢ for 34-inch; 2¢ for a 47-inch Farm Fence, 50-inch Poultry Fence 2¢. Lowest prices ever made. Sold on 30 days trial. Catalog free. Write for it today.

KITSELMAN BROS.
Box 21,
MUNCIE, IND.

FENCE Strongest Made

Made of High Carbon Double Strength Coiled Wire. Heavily Galvanized to prevent rust. Have no splices. Sell at factory prices on 30 days' free trial. We pay all freight. 37 heights of farm and poultry fence. Catalog Free.

COILED SPRING FENCE CO.
Box 101
Winchester, Indiana.



MAKES AND BURNS ITS OWN GAS

Tell Me Your Roof Troubles



Let me tell you, FREE, how to cure any keep, any roof trouble—tin, iron, steel, shingle, felt, gravel. Write now for Free Book on Roofs and ROOF-FIX, the great, guaranteed cure for roof troubles.

ANDERSON—"The Roof-Fix Man"
Department 24
ELYRIA, OHIO

PATENTS 25 YEARS' PRACTICE.

CHARLES J. WILLIAMSON,
Second Nat'l Bank Bldg., WASHINGTON, D. C.

Patent Practice in Patent Office and Courts.

Patent Counsel of
The A. I. Root Co.



Come to Sunny Virginia. You can buy fertile farms with timber, fruit and water for \$10 per acre and up. Splendid country for fruit growing, dairying, stock-raising and general farming. Fine climate, abundant water, convenient markets and good neighbors. Full information and valuable booklet upon request. Write for it.

F. H. LaBAUME, AGRICULTURAL & INDUSTRIAL AGENT, NORFOLK & WESTERN RY., Dept. O, Roanoke, Va.

Read His Letter

Read of the economy and profit in this farmer's potato-digging,—how he gets every potato in the field,—how he avoids loss from scarred and crushed potatoes,—how he has made the work easy and fast.



It Tells You

how the

Acme Hand Digger

ATTACHMENT

proved out under hard, practical actual field use:

Potato Implement Co., Traverse City, Mich.
Gentlemen.—Two years ago I bought one of your Acme Hand Potato Diggers, and after giving it a short trial in the field, my sons, who were digging the potatoes, were so pleased with the Acme Digger that I now have five in use on my farm.

The Acme is just the digger we needed. Unlike the machine diggers it digs clean, gets every potato in every hill, doesn't scar the stock, and is not bothered by the vines. The men work easily, yet quickly, and don't get so tired as with ordinary fork or hook digging.

I know from my own experience that the Acme Digger does better, easier and cheaper work than any other digger I have seen, and the best recommendation I can give anyone is that I continue to use it on my own farm.

I am, yours truly,

F. LAUTNER, Leelanau County.

 **Send \$1.00 Today.** Let the Acme Attachment prove itself to you. Let it prove that your dollar is better than \$100 investment in other diggers—that it will dig potatoes better and more economically—that it is the digger you have been waiting for. *Sent prepaid by express.* Money returned if you had rather have it than keep the digger.

Pamphlet and Potato Book free on request. Send now. Address Box 520,

Potato Implement Co., Traverse City, Mich.

LOTS OF EGGS

 If you feed raw bone fresh cut. Its egg producing value is four times that of grain. Eggs more fertile, chicks more vigorous, broilers earlier, fowls heavier, profits larger.

Mann's Latest Model Bone Cutter
Cuts all bone with adhering meat and gristle. Never clogs. **10 Days' Free Trial.** No money in advance. Send today for free catalog. **F. W. MANN CO., Box 37 MILFORD, MASS.**



TRAPPERS MAKE MORE MONEY ..

Copy of Hunter-Trader-Trapper, monthly magazine, 160 or more pages about steel traps, snares, deadfalls, trapping secrets, raw furs, dogs, big-game hunting, etc. and a 64-page booklet containing game laws, camping hints, etc., all for 10 cents. **A. R. HARDING PUB. CO., Box 319, COLUMBUS, OHIO**

The Money-saving House for Busy Bee-keepers. . .

No eloquence required to prove it so. Send list of goods wanted for lowest price of the season—less than factory price. No harm done if you don't buy. Write at once, and see what I can do.

H. S. DUBY, ST. ANNE, ILLINOIS
Call the attention of your friends to this offer.



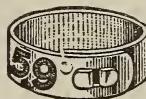
The Rochester Radiator will

SAVE HALF YOUR FUEL

Prices from
\$2 to \$12

For hard or
Soft Coal
wood orgas

Fits any
Stove or
Furnace



IDEAL ALUMINUM LEG BAND

To Mark Chickens

CHEAPEST AND BEST

12 for 15c; 25—25c; 50—40c; 100—75c.
Sample Band Mailed for 2c Stamp.

Frank Myers, Mfr., Box 69, Freeport, Ill.

ROOT'S GOODS ARE MONEY-SAVERS

We carry a full line of supplies, bees, queens, etc., and can supply you with any thing in the BEE LINE. Queens, any quantity, tested, \$1.00; untested, 75 cts. each.

REA BEE & HONEY CO.
REYNOLDSVILLE, PENNA.

BEESWAX WANTED

WE are always in the market for beeswax, and will pay the best market price. We used last year in the manufacture of **Comb Foundation** over

EIGHTY TONS

and are likely to need fully as much for this year's trade. Send your wax direct to us, being sure to pack it carefully for safe shipment, and mark it so we can easily tell who sends it. Write to us, at the same time sending a shipping receipt, and stating weight of shipment, both gross and net.

We are paying at this date for pure average beeswax delivered here, 28 cents per pound cash, or 30 cents in trade. On choice yellow wax we pay a premium of one to two cents a pound.

THE A. I. ROOT COMPANY, MEDINA, OHIO

FIVE HUNDRED QUEENS

**Our Queens were
never better than
they are now. . . .**

We have queens of every grade bred in our yards here, that we can send out by return mail.

We Guarantee our queens to be equal to any stock bred, and better than the average.

You Can't Expect to get large crops of honey if you have inferior stock in your yards.

It Doesn't Pay to leave old and common queens in the hives.

Requeen Now. We can furnish the best stock at this season of the year at such reasonable prices no one need hesitate to get the queens he needs.

The First Cost is really a secondary consideration now.

Quality is the first consideration, and we know you can not be better pleased than to send your order to us. We guarantee safe arrival anywhere in the United States.

Our Prices: Untested, \$1.00; select untested, \$1.25; tested, \$2.00; select tested, \$3.00; breeders, \$3.50; select breeders, \$7.50; extra select breeders, \$10.00.

Quantity Orders. We take special care of orders for queens in lots of fifty or more. Give plain mailing instructions, telling whether you want them all one day or at intervals, and we will get them to you just when you want them. We make special prices in quantity lots.

Write Us Today and get some of the best queens obtainable at reasonable rates, and be sure of getting a large honey crop. Our bees will gather honey if there is any to be had.

**The A. I. Root Co.
Medina, Ohio**

Queens of Moore's Strain of Italians

Produce workers that fill the supers, and are not inclined to swarm. They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.

Mr. W. Z. Hutchinson, editor of the *Bee-kee pers' Review*, Flint, Mich., says, "As workers, I have never seen them equaled. They seem possessed of a steady, quiet determination that enables them to lay up surplus ahead of others. Easier bees to handle I have never seen." My queens are all bred from my best long-tongued three-banded red-clover stock (no other race bred in my apiaries), and the cells are built in strong colonies well supplied with young bees.

Reduced prices: Untested queens, 75 cts. each; six, \$4.00; dozen, \$7.50. Select untested, \$1.00 each; six, \$5.00; dozen, \$9.00.

I am now sending queens by return mail.

Safe arrival and satisfaction guaranteed. Descriptive circular free. Address **J. P. Moore, queen-breeder, Rt. 1, Morgan, Ky.**



If You Need a Nice Yellow Italian Queen at once, send to C. J. FAJEN, Blackburn, Mo. Untested, only 65c; tested, \$1.25; 3-fr. nuclei with fine queen, \$2.75; full colonies in 8-fr. hive, \$5.50 with queen.

Golden and Red-clover Italian Queens

My queens are large and prolific. Their workers are hardy and good honey-gatherers. Give them a trial. Untested, one, \$1.00; six, \$5.00. Select untested, one, \$1.25; six, \$6.50. Select tested, \$2.00 each. All orders filled in rotation.

No nuclei or colonies for sale this season.

W. M. A. SHUFF, 4426 Osage Ave., Philadelphia, Pa.



SPECIAL PRICES for October and November on Italian queens and bees. Fine yellow golden, and three-banded queens by return mail. Virginias, 25 cts.; untested, 65 cts., or \$6.00 a dozen; tested, 95 cts.; and if these queens are not as good as any queen you ever had for \$1.50 or \$2.00, return them and get your money. If you try one of my queens you will want more. I have 100 stands of Italian bees, more than I can attend to, with tested Italian queens in Dovetail hives, which I will sell at reduced price as long as they last at \$4.75; 3-frame nuclei, with queen, \$2.75. Directions go with queen.

J. L. FAJEN, ALMA, MO.

W. H. LAWS has sold more queens in 1909 than any previous season. The reason is obvious; the people know where to get good queens and the right kind of service. In this latitude I can mail queens nearly every month in the year. If you need queens, send right along. I can take care of your orders whether it be one or one hundred. Single queen, \$1.00; six for \$5.00. Breeders, none better, each \$5.00.

W. H. LAWS, Beeville, Bee County, Texas.

QUEENS

of the Robey strain of 3-banded Italians during 1909. Warranted queens the remainder of the season, 60 cts. each in any quantity. Satisfaction, or money refunded.

L. H. ROBEY, Worthington, W. Va.

Queens by Return Mail.

We have a good stock of nice young laying queens ready to mail upon receipt of order, and would be pleased to supply your wants. Our queens are noted for their prolificness and honey-gathering qualities, being bred from the best honey-gatherers obtainable, and mated with SELECTED DRONES.

PRICES.	1	6	12
Untested.....	\$.75	\$4.25	\$8.00
Warranted.....	1.00	5.00	9.00
Tested.....	1.50		
Select Tested.....	2.50		

If you wish select untested or select warranted queens, add 25c each, \$1.00 for six, or \$2.00 for 12, to the list price. All cash orders booked and filled in rotation. Price list upon application.

W. W. CARY & SON, Lyonsville, Massachusetts.

DOLL SHIPPING CASES

ARE VERY WELL MADE

Of fine white basswood with one-piece cover and bottom. Can furnish with either corrugated paper or "no-drip sticks."

DOLL SHIPPING CASES

Are made for any number or size of sections with either 2 or 3 inch glass front. WE HAVE LARGE STOCK ON HAND which means prompt shipment, and our prices are lowest.

HONEY PACKAGES IN TIN

For shipping or storing extracted honey prevent leakage, and taint from wood; being square they are extra strong, and economize space.

1-gallon cans, 10 in a box.
5-gallon cans, 1 or 2 in a box.

SEND FOR 1909 ESTIMATE

MINNESOTA BEE-SUPPLY CO.

123 Nicollet Island,
Minneapolis, Minn.

Better Supplies

More Profits

You know to how large an extent the profits of bee culture depend upon the right kind of supplies, and you know, too, that just as important as the right supplies is to get them when you want them, at the right price.

In every way—location, stock, and low prices—we are fitted to serve you to your profit.

We Ship on Time

and you get the goods when you want them. We are centrally located, and can ship direct by boat and over thirty different railroads. Our stock is the best, and we sell the best goods at the lowest prices. What more can you want? Write today for our big book and special prices for this month.

Blanke & Hauk Supply Co.
1009-13 Lucas Ave. St. Louis, Mo.

HOW TO SAVE 50c on \$2.00

Beginning Jan. 1, 1910, the subscription price of the *American Bee Journal* will be \$1 a year. But all who pay for the years 1910 and 1911 before Jan. 1, 1910, can have the *Bee Journal* at 75 cents a year—the present price—thus saving 50 cents. Or, if you wish to save 25 cents, send us 75 cents for 1910 before next Jan. 1st. To new subscribers for 1910 we will throw in the rest of this year's (1909) copies free. So the sooner you subscribe the more you will get if you are a new subscriber.

Next year will be the *American Bee Journal's* fiftieth anniversary. You should have it. Dr. C. C. Miller is now its Associate Editor. Send for free sample copy if not acquainted with it. You surely will want it regularly after seeing it. Address

American Bee Journal, 146 W. Superior St., Chicago, Ills.

SUPERIOR QUEENS BY RETURN MAIL

QUEENS from the famous Red Clover stock, originated by me. Handsome three-banded Italians. If there is honey to be had they will gather it. Something better than the ordinary, at the same price you would pay for common stock. No poor or indifferent queens are sent out at any price. I have devoted myself to queen-rearing for so long, that I know every requirement of the business, and you may be sure that my stock is the best in every particular. My bees are gentle as well as handsome. Queens sent out now will begin to lay immediately, and will stock up your hives with vigorous young bees for winter. Now is the time to buy and have something extra fine to begin next season. My bees are exceptionally hardy, and will winter well if given ordinary attention. Untested, \$1; select untested, \$1.25. While present stock lasts will make the following discounts for quantities: 5 per cent for 6, 10 per cent for 12, 20 per cent for 24, 25 per cent for 50.

A FEW COMMENTS FROM CUSTOMERS:

Friend Wardell:—The queen received. She is a beauty; her escorts all living, and fine as silk.

Fraternally yours,

F. DANZENBAKER.

Norfolk, Va., April 14, 1909.

MR. F. J. WARDELL, Uhrichsville, Ohio.

Dear Sir:—I have been wanting to tell you something for some time. You remember I got a queen bee of you late last fall. Well, when I got her she had not much chance to show her blood; but I

tell you, sir, that she is a dandy, and I would not take any money for her. I placed her in a ten-frame hive, and she was the first one to show up; the prettiest little yellow Italians you ever saw.

Box 222. Yours truly,
JACOB HECK.

Gnadenhutten, O., June, 1909.

550 W. Walnut St., Lancaster, Pa.
MR. F. J. WARDELL, Uhrichsville, Ohio.

Dear Sir:—Enclosed you will

find \$1.50 in P. O. money order, for which send me at your earliest convenience a select untested queen. I received a queen from you last year and am well pleased with her. I like their gentle nature. Should this one be her equal I will have nothing but the Wardell brand.

Very respectfully,

J. H. SEITZ.
Prof. Math. Boys' High School,
Lancaster, Pa.
May 25, 1909.

Send now and get some of this fine stock before it is too late. You can't help being pleased with it

F. J. WARDELL, Uhrichsville, Ohio

A Fifty-Cent Bee-Book, Bound in Cloth, and Gleanings for one Year, for \$1.25.

WE have made special arrangements with the publishers of the *Farm Journal* by which we are able to supply our customers with a very neat, cloth-bound, beautifully printed, and illustrated in half-tone, copy of the Biggle bee-book. It is only 5½x4 in., by ¾ in. thick—just right to carry in the pocket. We have carefully gone over this little work, and consider it orthodox in its teachings throughout. It is just the thing for the busy man who would like to get a bird's-eye view of bee-keeping, and who has not the time to read the more comprehensive works. The book is, in fact, bee-keeping in a nutshell, boiled down, containing only the best practices known to the profession.

IT IS A LITTLE GEM

Beginners especially will find it very helpful; and as a companion to our more comprehensive work, the A B C and X Y Z of Bee Culture, nothing could be better. A reading of the little book will give one a brief and comprehensive idea of the business as a whole. The larger work will give the details.

We will include the A B C and the Biggle book both at \$1.75. The regular list price of the two is \$2.00.

Or we will include Gleanings, A B C, and the Biggle book for \$2.50.

The A. I. ROOT CO., Medina, Ohio

Classified Advertisements

Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department can not be less than two lines, and should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

Honey and Wax for Sale

FOR SALE.—New alfalfa honey, best quality, new cans and cases, 7½ c. H. E. CROWTHER, Parma, Idaho.

FOR SALE.—Choice well-ripened alfalfa honey in new cans, \$10 per case. A. S. PARSON, Rocky Ford, Col.

FOR SALE.—Fine quality of well-ripened raspberry-milkweed honey, in new 60-lb. cans (2 in box) at 8 cts. f. o. b. here. P. W. SOWINSKI, Bellaire, Mich.

FOR SALE.—Light-amber and buckwheat extracted honey in new 60-lb. cans. A. E. WOODWARD & SON, Voorheesville, N. Y.

WANTED.—Choice clover and basswood extracted honey, 7½ cts., f. o. b. West Bend, Wis. H. C. AHLERS, Rt. 1, West Bend, Wis.

FOR SALE.—Clover, basswood, and buckwheat comb and extracted honey; well refined. Write for particulars. E. L. LANE, Trumansburg, N. Y.

FOR SALE.—Well-ripened white-sweet-clover honey, mixed; light-amber color, new cans, 7 cts. J. ROORDA, 50 W. 108th Place, Roseland, Chicago, Ill.

FOR SALE.—Choice ripe honey, delicious flavor, light golden color, clear as crystal; 7½ to 8 cents. Sample 6 cents, deducted from order. F. B. CAVANAGH, Hebron, Ind.

FOR SALE.—Fancy extracted alfalfa honey, thoroughly ripened, rich and thick. If you want honey that will "taste like more," try a 60-lb. can for \$5.50. A. A. LYONS, Rt. 3, Fort Collins, Col.

FOR SALE.—Clover and raspberry honey mixed in new 60-lb. cans. Well ripened and of fine flavor. Sample, 10 cts. Price of sample may be deducted from order. JAMES MCNEILL, Hudson, N. Y.

HONEY FOR SALE by members of the Michigan Beekeepers' Association. For free annual booklet giving names and addresses of members address the Secretary, E. B. TYRREL, 230 Woodland Ave., Detroit, Mich.

FOR SALE.—Extracted honey, tupelo, 8½ cts. per lb.; light amber, 8½; sage, 9; all in 120-lb. cases; quantities less; samples, 10 cents. I. J. STRINGHAM, 105 Park Place, New York City.

FOR SALE.—Extracted honey, clover, basswood, and buckwheat, in 60-lb. cans and 225-lb. kegs; and comb honey and beeswax. Prices on application. W. L. COGGSHALL, Groton, N. Y.

FOR SALE.—Fancy extracted alfalfa and basswood honey, \$5.50 per 60-lb. can; \$10.75 per case of two 60-lb. cans; \$10.00 per case in quantities of 10 cases or more. ROB'T A. HOLEKAMP & SON, 4263 Virginia Ave., St. Louis, Mo.

FOR SALE.—Raspberry honey, new crop, left on the hives until thoroughly ripened, thick, rich, delicious, has raspberry flavor, stored in bright, new, round, jacketed 60-pound tin cans, with flat cover and wire bail. Ten cents a pound—\$6.00 for a can. Sample ten cents. W. Z. HUTCHINSON, Flint, Mich.

FOR SALE.—My new crop white-clover and basswood extracted honey, put up in brand-new 60-lb. cans; two cans to a case, at 9 cts. per lb. by case of 120 lbs., or 9½ cts. per lb. for single 60-lb. can, F. O. B. Flint; cash with order.

LEONARD S. GRIGGS, 711 Avon St., Flint, Mich.

FOR SALE.—Our crop of clover comb honey in 4 x 5 plain sections; also extracted of the following kinds: Clover, raspberry, basswood, and buckwheat. Not a pound of the above honey was extracted until after the close of the honey-flow. The fact is, there is none better on the market. State which kind you prefer, and the amount you can use, and we will quote you our lowest cash price and mail you a liberal sample. Remember we are specialists, and understand thoroughly the production of extracted honey.

E. D. TOWNSEND & SONS, Remus, Mich.

FOR SALE.—The finest honey produced in my forty-five years as a bee-keeper. All honey left with the bees until after the close of the honey season; ripe, clear, and of exquisite flavor. The above is from our bee-yards in Northern Michigan; can also supply fine amber fall honey, just now taken off the hives at our home yard. State kind and amount wanted, and we will quote prices. Samples free.

O. H. TOWNSEND & SON, Otsego, Mich.

Extract from a letter from good judges:

Mr. O. H. Townsend.—We are in receipt of your favor of the 17th, and the sample of honey. We believe it would be impossible for the bees to gather finer honey than the sample submitted. We regret to say that we have already bought all the honey we care to at the present time. Thanking you for the offer and the privilege of tasting such fine honey, we remain very truly yours,

Middlebury, Vt., Sept. 20.

J. E. CRANE & SON.

All honey from our Northern Michigan yards is like the sample referred to above. Try some and note the smile of satisfaction it will produce.

Honey and Wax Wanted

WANTED.—Comb, extracted honey, and beeswax. State price, kind, and quantity.

R. A. BURNETT, 199 South Water St., Chicago, Ill.

WANTED.—Five hundred cases fancy white-clover New-York State comb honey; 24 to case.

M. H. TWEEDE & Co., Pittsburgh, Pa.

WANTED.—White honey. State kind, how put up, and lowest cash price.

CHAS. KOEPPEN,

1508 Main St., Fredericksburg, Va.

WANTED.—Fancy comb and gilt-edged clover extracted honey. Can furnish shipping-cases and cans cheap in part payment if desired.

B. WALKER, Clyde, Ill.

WANTED.—To buy for cash, a quantity of extracted honey. State price, kind, and quantity. Interested in car of alfalfa.

A. G. WOODMAN Co., Grand Rapids, Mich.

WANTED.—To buy a farm of about 40 acres near some good town in Southeast Nebraska, Northeast Kansas, or Northwest Missouri. Give price and particulars in first letter.

S. F. HANSON, Cowles, Webster Co., Neb.

Wants and Exchanges

WANTED.—To buy a carload of bees.

F. B. CAVANAGH, Hebron, Ind.

WANTED.—Cigar-box planer and bee-hive machine.

G. ROUTZAHN, Bigerville, Pa.

WANTED.—Refuse from the wax-extractor, or slum-gum. State quantity and price.

OREL L. HERSHISHER,

301 Huntington Ave., Buffalo, N. Y.

Real Estate

FOR SALE.—A farm of 31 acres near Schenectady, N. Y., with or without apiary; good buildings; excellent land; fine bearing orchard.

A. E. WOODWARD,

Rt. 2, Voorheesville, N. Y.

FOR SALE.—Fine country place at a sacrifice; 65 colonies of bees with good equipment; splendid bee-range; fine poultry equipment; good roads; close to a good town. If you are looking for a snap, inquire of E. C. FOUTZ & BRO., West Alexandria, Ohio.

FOR SALE.—Real estate. Two lots on Tonawanda St.; eight-room house; large poultry-house; house-apairy for 32 colonies; one block from Niagara Street cars; good location; unlimited house trade; \$1500 down; balance in mortgage.

J. TILLEY,

98 Baxter St., Buffalo, N. Y.

FOR SALE.—82 acres in the best cultivation, and fruit, two miles from Caldwell. I will sell the same in ten-acre tracts on easy terms; splendid for poultry and bees. Also one nine-room house and large barn and block half a mile from postoffice. For particulars address OTTO GEISE, Caldwell, Idaho.

Bees and Queens

FOR SALE.—Italian queens; untested, 50 cts.; select, 75 cts.; tested, \$1.00. ROBT. B. SPICER, Wharton, N. J.

FOR SALE.—Golden-all-over queens, and bee-keepers' supplies. T. L. McMURRAY, Silverton, W. Va.

FOR SALE.—I offer 125 colonies of bees at \$3.50 per colony if all are taken; in good condition for winter; never had foul brood. C. H. DIBBERN, Milan, Ill.

FOR SALE.—An apiary of 80 colonies fully equipped for comb and extracted honey. JOHN HENDRICKS, Rt. 12, Mt. Vernon, Ind.

FOR SALE.—Bees, 13 colonies, in new Langstroth hives, cheap. For particulars address DR. E. BOYNTON, Millersville, Lancaster Co., Pa.

Extra-fine queens of the red-clover strain, bred by the originator. Fine queens for breeders' use, a specialty. F. J. WARDELL, Uhrichsville, Ohio.

FOR SALE.—100 colonies of bees; also empty hives, supers, and all fixtures for running a first-class apiary. W. P. TURNER, Peoria Heights, Ill.

FOR SALE.—32 colonies bees, 170 supers, 1 tank, and a four-frame extractor, all for \$160 if taken at once. M. A. JONES, Atwater, Ill.

FOR SALE.—1000 colonies of bees with fixtures; run principally for extracted honey. DR. GEO. D. MITCHELL & CO., 340 Fourth Street, Ogden, Utah.

FOR SALE.—30 colonies of Italian bees in eight-frame sectional hives with sufficient stores for winter; 53 supers, and equipment for comb honey. Price \$120. FRED SCHRATER, Langdon, Mo.

FOR SALE.—31 colonies Italian bees in modern hives; plenty of stores, and in fine shape, at New Glarus, Wisconsin—a fine clover district; \$100; must sell. Address BEEMAN, 301 North Lake St., Madison, Wis.

Missouri-bred Italian queens by return mail. Select untested, 75 cts.; tested, \$1.00; breeders, \$3.00; virgins, 40 cts.; dozen lots 20 per cent discount. L. E. ALTWEIN, St. Joseph, Mo.

FOR SALE.—175 swarms of bees at a bargain if taken soon; 8 and 10 frame 2-story hives with Hoffman frames, built from wired foundation. If interested call on or write. W. H. RAILS, Orange, California.

FOR SALE.—75 colonies bees in Danzenbaker hives among the orange-groves of Southern California, 27 miles east of Los Angeles, on electric line. Orange-blossom honey surest crop, and fine quality; whole outfit for comb and extracted honey. Sickness compels sale. M. H. PHILLIPS, Glendale, Cal.

FOR SALE.—Moore's strain and golden Italian queens, untested, \$1.00; six, \$5.00; twelve, \$9.00. Carniolan, Banat, and Caucasian queens, select, \$1.25; six, \$6.00; twelve, \$10.00. Tested, any kind, \$1.50; six, \$8.00. Choice breeders, \$3.00. Circular free. W. H. RAILS, Orange, Cal.

Pet Stock.

FOR SALE.—I have for sale a few high-class Scotch Collie puppies, both sexes, by the noted Madison Square Garden winner Parbold Provost. Males, \$25.00 and \$20.00; females, \$20.00 and \$15.00. Also the following rare bargains:

Craigmore Hope, a beautiful sable and white dog, fit to win at small shows, or to head a small kennel. Lowest price \$35.00.

Craigmore Casghair, rich golden sable and white; full white collar and blaze; can win a little; breeding unsurpassed, and a beauty in good condition and coat. Price \$35.00.

Craigmore Beauty, imported; has won and can win; rich sable; full white collar and frill. Price \$45.00.

I have also some good black and chocolate "Poms." Send for full particulars and copies of pedigree of any or all. They are offered at half price. WILLIAM C. HUNTER, Chambersburg, Pa.

For Sale

FOR SALE.—Bee-supplies at factory prices. D. COOLEY, Kendall, Mich.

FOR SALE.—Brand-new No. 5 Oliver typewriter for sale cheap. G. S. EBERLY, Akron, Pa.

FOR SALE.—New unhulled white-sweet-clover seed, 15 cts. per lb.; postage, 8 cts. per lb. extra. ANTON G. ANDERSON, Holden, Mo.

FOR SALE.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Write for catalog and particulars. THE PENN CO., successors to W. P. Smith, Penn, Miss.

FOR SALE.—Unhulled sweet-clover seed, just gathered; 8 cts. per lb. f. o. b. cars here; small lots, less than 4 lbs., by mail, 12 cts. per lb., postpaid. WM. CRAIG, P. M., Luce, Mich.

Poultry

A. I. Root's Bee-goods, Poultry-supplies, Seeds, etc. STAPLER'S, 412-414 Ferry St., Pittsburgh, Pa.

FOR SALE.—Chicks, 8 cents each; eggs, \$4.00 per 100; shipped anywhere. CULVER POULTRY FARM, 4086 Main St., Benson, Neb.

FOR SALE.—Thoroughbred White Plymouth Rocks and White Wyandottes; beautiful birds; satisfaction guaranteed. WM. H. ROBINSON, Route 7, Lafayette, Ind.

Help Wanted

WANTED.—A hustling helper in the bee and honey business—preferably one who has cash to invest in securing an interest in one that is established and profitable. B. WALKER, Clyde (Chicago suburb), Ill.

Situation Wanted

WANTED.—By an apiarist with experience in tropical apiculture a situation in Cuba or Florida. F. G. DENZINGER, Olean, N. Y.

WANTED.—Situation by man 28 years of age; fully acquainted with bee-keeping; also handy with carpenter tools, and willing to do general farming. Address F \$22, Gleanings in Bee Culture, Medina, O.

Bee-keepers' Directory

FOR SALE.—Bees, queens, and honey. Write to A. H. KANAGY, Kishacoquillas, Pa.

Bee-keepers' Supply Co., Lincoln, Neb. We buy car lots of Root's goods. Save freight. Write.

ITALIAN BEES, queens, honey, and Root's bee-keepers' supplies. ALISO APIARY, El Toro, Cal.

Well-bred bees and queens. Hives and supplies. J. H. M. COOK, 70 Cortlandt St., New York City.

For bee-smoker and honey-knife circular send card to T. F. BINGHAM, Farwell, Mich.

Golden yellow Italian queens my specialty; 1909 price list ready. Safe introducing directions. E. E. LAWRENCE, Doniphon, Mo.

Golden and red-clover Italian queens. See my other adv't in this issue. WM. A. SHUFFE, 4426 Osage Ave., Philadelphia.

Italian queens from direct imported mothers, red-clover strain, \$1.00. Circular.
A. W. YATES, 3 Chapman St., Hartford, Conn.

FOR SALE.—High-grade red-clover and Golden queens. Safe arrival and satisfaction guaranteed. One, 75 cts.; six, \$4.00; dozen, \$7.50.

SIRES BROS. & CO., North Yakima, Wash.

QUEENS.—Improved red-clover Italians, bred for business—June 1 to Nov. 15, untested queens, 60 cts.; select, 75 cts.; tested, \$1.00 each. Safe arrival and satisfaction guaranteed. H. C. CLEMONS, Boyd, Ky.

Quirin's famous improved Italian queens ready in April; nuclei and colonies about May 1. My stock is northern bred, and hardy. Five yards wintered on summer stands without a single loss in 1908; 22 years a breeder. For sale, several tons of fall honey.

QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

Honey Markets continued from page 2.

ST. LOUIS.—This market at the present time is almost entirely bare of comb as well as of extracted honey. Prices have materially advanced, and we quote as follows: Fancy white comb honey, 15 to 16; choice amber, 13 to 14; dark or granulated is not in demand, and nominal at 7 to 9. Broken or leaking honey sells at much less. Amber extracted honey in five-gallon cans sells at 6½ to 7; in barrels, 6. Beeswax, 25¢ to 28¢ for choice pure; all impure and inferior, less. Sept. 21. R. HARTMANN PRODUCE CO.

CHICAGO.—Were it not for the fact that fruits of all kinds are arriving on this market very freely, the demand for comb honey would be considerably stronger. However, after the first of the month we look for a decided improvement in the honey situation on both comb and extracted; and it is certainly to bee-keepers' interests if they have any honey to let it come forward during the next 30 or 60 days. These are the best months to make disposition of honey. Quote our market to-day as follows: Strictly fancy white comb honey, 16 to 17; No. 1 white, 15; No. 2 white and light amber, 13 to 14; medium amber, 10 to 12. White clover extracted, 7½ to 8; light amber, 7; medium amber, 5 to 7. Bright pure beeswax, 30 to 32.

Sept. 21. S. T. FISH & CO.

SPECIAL NOTICES

BY OUR BUSINESS MANAGER

HONEY IN DANZENBAKER SECTIONS.

We are especially desirous to secure as much comb honey as possible in 4x5 sections or in shallow frames. It must be choice white comb honey, without mixture of honey-dew. If any of our readers have or know of such honey to be had we should be pleased to hear from them, stating quantity, and price asked.

ADVANCED PRICES.

In our last issue we gave a brief announcement of an advance in price of hives, frames, sections, and other wooden goods. In connection with this notice there appeared a partial list of revised prices as they will appear in our new catalog. We now have a sheet comprising all the new prices, which we shall be glad to mail to anybody interested. One of these sheets accompanies all catalogs which we are mailing until the new edition, incorporating the new prices, is ready.

The early-order discount, which applies to the revised prices where a change has been made, is 6 per cent for cash orders during the month of October.

Special Notices by A. I. Root.

FLORIDA—LOW EXCURSION RATES; ONLY \$25.00 FOR THE ROUND TRIP FROM CINCINNATI TO MANATEE CO.

AND OTHER POINTS.

We are just informed that the Seaboard Air Line R'y Co. makes a special excursion rate, Oct. 5 and 19, Nov. 2 and 16, and Dec. 7 and 21. And let me repeat, before you invest in any of the real-estate schemes now being so extravagantly advertised, invest \$25.00 in money and 25 days in time, and go and look up things yourself. Do not put a copper into anything of this sort, no matter what inducements may be held up before you, until you have made a trip and seen the place with your own eyes. Then if you choose to invest, go ahead. But do not take your family and possessions

into a new and untried land and climate until you have first been there yourself. That is the advice of your old friend A. I. Root. Address J. W. White, Seaboard Air Line Railway, Portsmouth, Va.

THE NEW POULTRY BOOK, THE DOLLAR HEN.

The more I read this new book the more I value it. If you will read the extracts I have given on page 618, and also the advertisement on the cover, you will get a pretty good idea of its general tenor. The great point is, it comes from a man who was in the employ of the Department of Agriculture. His opinions are not only unbiased, but he does not seem to care very much whom he hits, in advising the boys and girls and men and women who are thinking of taking up poultry culture. I bought 100 copies to start with, and a third of them are already sold. Please notice reduced price to readers of GLEANINGS, which will be sent one year, and the book, for \$1.50. If you have already paid for GLEANINGS for a year or more, the book will be sent postpaid for an even 75 cents.

"HOW TO KEEP WELL AND LIVE LONG."

The above is the title of T. B. Terry's new book that is now in the hands of the printers, and which is expected to be sent out Dec. 25. The *Practical Farmer* of Philadelphia, Pa., contains the author's introductory to the book. When I first read it I began to plan for clippings to put in GLEANINGS; then when I turned over to Terry's regular article in the same issue I found so many more good things that it seemed ought to go in GLEANINGS I finally decided to tell our readers to send a postal card at once, asking for a sample copy of the *Practical Farmer* for Sept. 25. If the publishers will not let you have it free of charge, tell them I said they should charge it up to their old friend (or their long-time friend), A. I. Root. Terry, as you know, is comparatively a neighbor and special friend of mine, and therefore my opinion may be somewhat biased; but I can not help thinking that just now he has made the best contribution to the science of *right living* that has ever been given to poor sick and suffering humanity. He may make some mistakes, it is true; and we must always remember that teachings that are just right for one person may not be exactly right for another; but taking it all in all, T. B. Terry has helped more people to climb up to health and happiness than any other one man I know of. Let me say again, however, that the above is simply my opinion; but the crowds of people who are now indorsing him, and saying he is exactly right about fresh air, pure water, and a simple diet, I think bears out my statement.

THE WONDERBERRY; SWEET CLOVER, ETC.

I have just returned from a visit to our Ohio Experiment Station. They have a nice row of plants of the wonderberry, loaded with fruit; but the statement that the fruit is ever fit to eat raw, no matter how well it is ripened on the bushes, is ridiculous. It is about the meanest-tasting thing I ever got hold of. But it does make very good pies. One of the professors remarked, however, that it needs vinegar or some other acid to make it sour enough, and then sufficient sugar to make it sweet enough. Then I remarked that "a whole lot of things" would make good pies if we would do that way. Last season they attempted to grow it; but the flea beetle attacked it so fiercely from first to last that they did not have any fruit. This year they succeeded, with a good deal of pains, in keeping off the beetle. But Prof. Thorne suggested that we should be a little careful about bringing in a plant on the ground, that seems, like this one, to invite the flea beetle, and encourage it to multiply at such a rate as to get it on to the potatoes and other stuff in the garden. And this was the first time that I ever caught on to the fact that some new plants may introduce and develop special insect pests. By the way, I have just discovered the following in our last *Rural New-Yorker*:

The north-pole topic is about the wonder of the universe just now; next to it come the flying-machines, and last, but not least, is the wonderberry, and I think the whole thing is going to be a good lasting rebuke to seedsman who drag out old things under new names with a fixed-up wonderful story. Don't you think so? And, by the way, why do not our experiment stations come out in the open and make themselves heard?

A. I. ROOT.

On page 619, there is a suggestion that sweet clover will stand a very heavy dressing of lime, in fact, Prof. Thorne says that on their soil at Wooster, O., they can not get a rank growth of sweet clover *without* lime; and he says that their experiments seem to indicate that it is almost impossible to put on too much lime for this clover. He also adds that there is no clover known of so much value in bringing up poor soils and preparing them for alfalfa and other clovers as sweet clover. What do you think of that as a report from one of the best experiment stations in the United States?

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BE SURE TO GET OUR PRICES ON

BEESWAX

Before selling your season's wax, or let us send you our prices for working your beeswax into

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We can use almost an unlimited quantity of beeswax, and we are buying all the time.

During the season of 1909 we handled over 150,000 pounds of beeswax.

If your honey supply is short we can supply you with white or amber honey. Send for prices at once.

Dadant & Sons, Hamilton, Illinois

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We are now fully moved, located, and well stocked with a FULL LINE of supplies. We have the best shipping facilities, and with plenty of help we promise to get goods to you promptly. There are only two reasons whywe might fail; viz., the neglect of some transportation company to give its usual good service, and our inability to turn out stock fast enough to care for your orders. We are promised a large carload from our factory every TEN days, so you see we expect to take good care of your orders. If you haven't our new catalog let us send you one.

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a formal note or a social letter, you are often forced to choose between a printed business letterhead, ladies' stationery, or some of the soft, flimsy paper so often offered men. Ask your dealer for "the stationery of a gentleman,"

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a paper meeting every social requirement, and distinctly for men. Keep a box in your rooms and one at the office.

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Are You a Fruit-grower?

If you are, it will pay you to investigate Michigan. The fruit orchards of this State have made the growers independent in the past few years.

The Cherry Crop Alone---

Brought more than a MILLION DOLLARS to the growers this season, and there was a demand for ten times more than was produced. Cherries yield fabulous crops in the great MICHIGAN FRUIT BELT.

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The peach orchards of Michigan will bring more millions into the State, for the 1909 crop is more than good, it is splendid.

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In Michigan. It is not all fruit; the potato crop this season will be the best in years, and last year's crop put Michigan second in the list of all the States. Hay, oats, corn, rye, wheat, barley, red clover, and

White Beans Beat the World---

In Michigan. You can get wild land that will grow any of these crops at from \$5 to \$15 and \$20 per acre NOW. Next year you will pay more. It's worth more. Take advantage of the

Home-seeker Excursions---

Via the Pere Marquette this Fall, and see these things for yourself. Illustrated booklet sent on request to either

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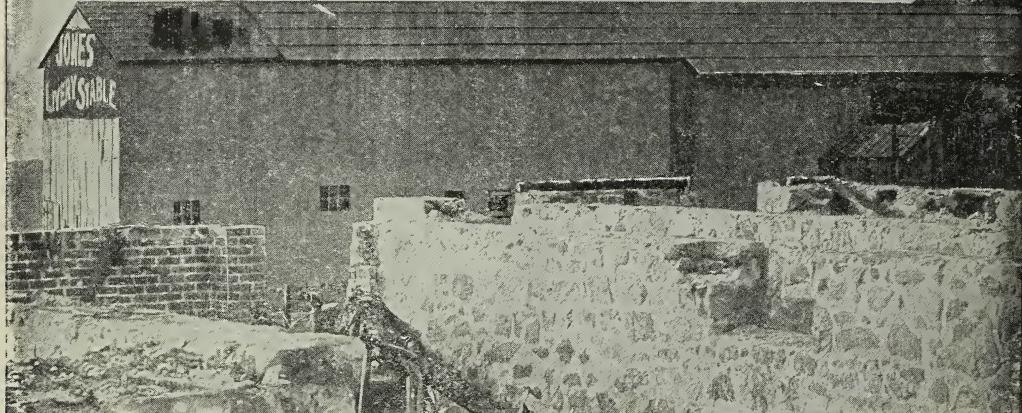
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CAUGHT FIRE



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We do not claim that Ruberoid is fireproof. If the house burns from *within*, the roof will be destroyed whether it be of Ruberoid, of slate, or even of iron.

But a roof of Ruberoid is as safe from fire *from without* as any roof can be. You can safely throw burning coals on a Ruberoid roof. The coals will not set fire to the Ruberoid, nor to the timbers underneath.

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For here is a roofing which is sun proof, snow proof, rain proof. It withstands acids, gases and fumes. It is so flexible that it stands the strains of contraction and expansion which cause ordinary roofs to leak.

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Since Ruberoid was invented, nearly twenty years ago, there have been many substitutes—more than 300.

Many of these substitutes have names which sound like Ruberoid. And until they are laid and tested, they look like Ruberoid. But do not let these facts deceive you.

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